Investing in people, discovery and innovation

Research Means Business
A directory of companies built on NSERC-supported university research
The Natural Sciences and Engineering Research Council of Canada (NSERC) is the national instrument for making strategic investments in Canada’s capability in science and technology. NSERC supports both basic university research through discovery grants and project research through partnerships among universities, governments and the private sector, as well as the advanced training of highly qualified people.

October 2005
Research Means Business

A directory of companies built on NSERC-supported university research
This publication is about cutting-edge research leading to industrial innovation and the creation of new business enterprises. It features 141 Canadian companies, operating in widely different industries, from aerospace to pharmaceuticals, from information technology to agriculture. But for all their diversity, they share a common characteristic – they are all first-generation companies whose roots can be traced directly to university research supported by the Natural Sciences and Engineering Research Council of Canada (NSERC).

Together, these university spin-off companies have created nearly 13,000 jobs and produce annual revenues of more than $3.5 billion in Canada. Several spin-offs have gone public and new ones continue to be created. These companies and the process that creates them are fundamental to Canada’s ongoing prosperity.

As this publication illustrates, many of these university spin-offs enjoy considerable success in the marketplace. Indeed, new findings suggest that university spin-offs have a much greater likelihood of prospering than do spin-offs from other sectors of the economy. According to a recent study by the National Research Council’s Industrial Research Assistance Program (IRAP), firms that emerged from higher education research from the 1990s up to 2004 were four to five times more likely than others to become “gazelles” – rapidly expanding enterprises that double sales and/or employment within a five-year period. The study also found that these exceptional performers demonstrate a remarkable resilience through business development cycles, and retain strong and productive R&D partnership links to universities. The continuing involvement of professors as leaders in a number of these companies belies the popular notion that academics and business do not mix. While this success is gratifying, more research is needed to identify the conditions conducive to the success of these companies, and how these conditions might be replicated elsewhere.

For over 25 years, NSERC has been investing in university research. Many of the companies described here grew out of NSERC grants for basic research. These grants are awarded on the basis of the excellence of the investigator and of the proposed program of research. This commitment to excellence has led to radical discoveries and innovations, often unexpected, that become entirely new technologies and the basis for new enterprises.

NSERC also funds research in which innovation is an expected outcome. NSERC Research Partnerships programs bring university researchers and industry together to work on projects seeking answers to important problems that can’t be solved with existing knowledge. These solutions often lead to innovations in products or processes. They involve existing companies and are not included in this summary. To date, more than 1,000 companies have partnered with NSERC in funding research projects in universities, and many of these companies have participated in multiple projects.
One of the most recent additions to NSERC’s funding suite is a vehicle that assists the formation of new enterprises commercializing university discoveries. Known as “Idea to Innovation” or I2I, the program supports a range of early-stage business development activities, including proof-of-concept, business planning and market research. We expect future editions of Research Means Business to include successes emerging from the I2I program.

In tracking the return on NSERC’s investment in basic research, research partnerships and the training of scientists and engineers, it becomes clear that university research has an essential role to play in the prosperity and well-being of all Canadians. Generating new knowledge and skills has proved to be the surest means to ensure innovation and sustainable job creation.

The companies profiled in this publication represent one important way that university research contributes to innovation in Canada. Our universities are very good at it, and they are ready to do more to help to meet the government’s commitment to make Canada one of the most innovative countries in the world.

We see Canadians working at rewarding and meaningful jobs because they have the skills and knowledge to create value and meet needs in the global economy. We see Canadian scientists and engineers respected throughout the world because of their leading-edge discoveries and trailblazing projects. We see Canadian industries thriving because business is taking full advantage of the nation’s capacity for science-based innovation. And we see NSERC playing a leading role in making all this happen… by investing in people, discovery and innovation.
Introduction

The outcome of university research supported by NSERC is often most visible when a new university spin-off company is created. The start-ups highlighted in this edition of *Research Means Business* were founded to commercialize the results of research partially funded by NSERC. The 141 companies featured in this report are located in nine provinces. They range in size from recent start-ups with only four employees to well-established firms with thousands of workers. They are active in most economic sectors and produce goods and services that have a large impact on the Canadian economy.

**Impact**

The university spin-off companies featured here were built on leading-edge research in science and engineering. Their success is based on new and unique products and services. Together, these companies employ nearly 13,000 Canadians and generate more than $3.5 billion in annual sales. Nearly 30 firms in this publication are listed on public stock exchanges and have a combined market capitalization of $10 billion. Six firms have a market capitalization of more than $500 million and seven firms are among the top 100 R&D spenders in Canada. Tables 1 and 2 list the top 20 firms by number of employees and revenue, respectively.

Sixty per cent of all spin-off companies in this edition of *Research Means Business* work in the following sectors: Computer and Software Services (22%), Pharmaceuticals/Biotechnology (20%) and Computer, Electronic and Electrical Equipment (18%) (see Figure 1).

**Figure 1: Sector Distribution of NSERC-Related Spin-Offs**
Provincial Distribution

The university start-up companies described in this publication have headquarters across Canada in nearly all provinces, with almost three-quarters of these companies located in Ontario, Quebec and British Columbia. The highest revenues and the highest number of employees are found in companies located in British Columbia, Ontario and Alberta (see Figure 2).

Figure 2: Provincial Distribution of NSERC-Funded Start-Ups

Table 1: Top 20 Spin-Off Companies by Number of Employees

<table>
<thead>
<tr>
<th>Spin-Off Company</th>
<th>Number of Employees</th>
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</thead>
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<tr>
<td>Stantec</td>
<td>2,548</td>
</tr>
<tr>
<td>MacDonald, Dettwiler and Associates (MDA)</td>
<td>1,400</td>
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<td>DALSA</td>
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<td>International Road Dynamics</td>
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<tr>
<td>Westport Innovations</td>
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1 All figures are accurate as of October 2005.
Table 2: Top 20 Spin-Off Companies by Revenue

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<th>Spin-Off Company</th>
<th>Total Revenue ($ in millions)</th>
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<td>Platform Computing</td>
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<td>Virtek Vision International</td>
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<td>Certicom 3</td>
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<td>Westport Innovations</td>
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<td>TIR Systems 3</td>
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<td>TurboSonic</td>
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<td>Focal Technologies</td>
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</table>

1 All figures are accurate as of October 2005 unless noted otherwise.
2 Includes only companies that have declared revenue.
3 As of 2004.

Origins

The 141 companies featured in this report came out of 27 Canadian universities. The top 10 source universities are listed below. Combined, they account for 70 per cent of the 141 firms featured here.

<table>
<thead>
<tr>
<th>University</th>
<th>Number of Start-Ups</th>
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<td>University of Saskatchewan</td>
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<td>Simon Fraser University</td>
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</table>
From a list of over 1,000 active university start-up companies believed to have been founded based on university research, NSERC has been able to obtain a comprehensive picture of Canadian university start-up companies and the role NSERC played in supporting the research that helped lead researchers to found these companies.

With the help of the companies’ founders, NSERC was able to determine whether the university start-up companies in our database should be featured in this edition of Research Means Business. The criteria used to identify these companies are:

1) an NSERC researcher must have founded the company;
2) the company must still be active;
3) the company must have its headquarters in Canada;
4) the company must be well established;
5) the researcher must determine if NSERC-funded research led to the formation of the company; and
6) the researcher and the company must agree to have their company listed in Research Means Business.

Our research has uncovered 201 university start-up companies created to commercialize research funded, or partially funded, by NSERC. Many of these companies are now inactive, have been acquired by other firms or do not meet the above criteria, which leaves 141 university start-up companies for this report.

The 2002 edition of Research Means Business included 134 university start-up companies. Thirty-four of them could not be included in this publication because:

1) 12 companies were acquired by mostly U.S. corporations;
2) 12 companies are now inactive;
3) four companies experienced staff reductions and are now too small to be listed in this edition; and,
4) six companies were removed from this edition of Research Means Business for various reasons, such as moving their headquarters to the U.S. or changing the company’s focus away from the original IP, which was developed in part with NSERC funding.

In addition to the early-stage companies mentioned above, there are another 51 companies in our database that are still at the developmental stage. Some of these may meet the criteria and be included in the next edition of Research Means Business.

The following profiles were compiled with the assistance of the companies in describing the innovative products and services which they are currently developing or producing. NSERC understands that there are many spin-off companies created from NSERC-funded research that are not included in this edition of Research Means Business. We hope that future editions of this directory will include more of these firms.
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1 Includes companies that report revenue only.
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**AB BioPharma Inc.**

Chairman of the Board of Directors: James Rae  
3553 31st Street NW, Suite 130, Calgary, Alberta   T2L 2K7  
Tel.: (403) 270-7027   Fax: (403) 270-2384  
E-mail: aburet@ucalgary.ca

**ANNUAL REVENUE:** Confidential  
**NUMBER OF EMPLOYEES IN CANADA:** 5  
**YEAR INCORPORATED:** 2001  
**STOCK MARKET LISTING:** Not listed  
**INDUSTRIAL SECTOR:** Pharmaceuticals/Biotechnology  
**WEB SITE:** N/A

**Products or Services**

AB BioPharma is developing novel nutraceutical and pharmaceutical products based on a natural protein found in milk called Epidermal Growth Factor (EGF). When EGF is present in a person’s intestines, it protects the intestinal wall and lets bacteria, protozoa and viruses pass through a person’s system harmlessly. EGF may prevent common ailments, including acute diarrhea and gastric ulcers.

The technology is protected by a number of patents issued to AB BioPharma worldwide.

**NSERC Researchers**

AB BioPharma was founded around the patented Epidermal Growth Factor (EGF) technology developed by Drs. Andre Buret, Grant Gall, James Hardin and Merle Olson at the University of Calgary. Dr. Andre Buret is a full professor of zoology at the University of Calgary and serves as a director on the board of AB BioPharma. Dr. Buret’s research activities were supported by NSERC during his postgraduate and postdoctoral studies. He has also received Discovery, Research Tools and Instruments, Industrially Oriented, and Collaborative Research Development Grants. Dr. Merle Olson’s research has been supported by NSERC Discovery, Research Tools and Instruments, and Strategic Project Grants.
Accutrak Systems Ltd.

President: Dr. Ron Palmer
1125 Pettigrew Avenue, Regina, Saskatchewan S4N 5W1
Tel.: (306) 584-0085  Fax: (306) 584-3234
E-mail: info@accutrak.ca

Products or Services
Accutrak Systems focuses on vehicle guidance systems for the agricultural industry.
Precision guidance allows farmers to reduce costly overlap and missed areas thereby improving farming efficiency. It also allows them to continue working at times when visibility is reduced, thereby ensuring the job gets done. Accutrak’s AutoSteering products improve on existing GPS Guidance products by taking on the job of steering along parallel lines. The operator is left only with the task of turning the vehicle around at headlands and steering along obstacle boundaries.

NSERC Researchers
Dr. Ron Palmer, the founder and president of Accutrak Systems, is a professor of electronic systems engineering at the University of Regina. His research on navigational systems has been supported by NSERC Discovery Grants since 1983.

ANNUAL REVENUE: $2,000,000
NUMBER OF EMPLOYEES IN CANADA: 15
YEAR INCORPORATED: 1984
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.accutrak.ca
Products or Services
Actenum develops software for the optimization of plans, schedules and decision making. The company specializes in addressing operational situations where tight user interaction and rapid solution generation is required. Responding quickly and effectively to unanticipated disruptions in schedules is crucial to operational success in business. Traditional solutions do not provide the ability to respond effectively to unplanned events, which limits their practical application.

Actenum’s solutions, based on artificial intelligence and operational research, help leading organizations calculate the best utilization of valuable resources such as vehicles, people, equipment and materials. This results in substantially increased capacity utilization of expensive assets, decreased downtimes and increased operating margins.

NSERC Researchers
Dr. William Havens, Actenum’s chief technology officer, is an internationally renowned expert in constraint reasoning and artificial intelligence. Dr. Havens is an associate professor in the School of Computer Science at Simon Fraser University (SFU) as well as the director of the SFU Intelligent Systems Laboratory. His research on constraint reasoning has been funded by NSERC and the Institute for Robotics and Intelligent Systems (IRIS), a Network of Centres of Excellence.
Advanced Integrated MicroSystems (Canada) Ltd.

Chief Executive Officer: Dr. Arcadio Chonn
801-1331 Alberni St., Vancouver, British Columbia V6E 4S1
Tel.: (604) 632-4680  Fax: Not listed
E-mail: info@aims-bio.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 5
YEAR INCORPORATED: 2001
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.aims-bio.com

Products or Services
Advanced Integrated MicroSystems products are biochip-based tools and instrumentation for pharmaceutical and biotech companies to speed up the process of discovering and validating new drugs. The biochip is a fully automated sample preparation microsystem for protein analysis. It takes the protein sample isolated by electrophoresis and integrates a number of procedures that must be conducted before the sample can go to a mass spectrometer.

NSERC Researchers
Advanced Integrated MicroSystems was founded by Drs. Arcadio Chonn and Jed Harrison.

Dr. Harrison is a professor in the chemistry department at the University of Alberta and the chief technical officer of Advanced Integrated MicroSystems. His research is supported by various funding agencies, including NSERC. He has received numerous NSERC grants, as well as a Steacie Fellowship in 1996.
Advitech specializes in the development of bioactive products derived from dairy proteins. Its key focus areas are in the fields of immunology and inflammatory processes. Its main platform, XP-828L, is a bioactive complex used in the development of an oral treatment for psoriasis and other immune system disorders.

NSERC Researchers
Advitech founders Drs. Sylvie Gauthier, Paul Paquin and Yves Pouliot are members of the Centre de recherche en sciences et technologie du lait (STELA) at Université Laval’s Département des sciences des aliments et de nutrition. Drs. Gauthier and Pouliot are funded by NSERC Discovery Grants. Dr. Sylvie Gauthier is a member of the Research Network for Lactic Bacteria.
Aegera Therapeutics Inc.

President and Chief Executive Officer: Michael Atkin
810 chemin du Golf, Nun’s Island (Montréal), Quebec   H3E 1A8
Tel.: (514) 288-5532   Fax: (514) 288-9280
E-mail: info@aegera.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 46
YEAR INCORPORATED: 2000
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.aegera.com

Products or Services
Aegera Therapeutics focuses on exploiting apoptosis control (also known as programmed cell death) to extend and enhance the life of cancer patients. The company’s technology kills cancer cells by inducing apoptosis and preventing damage to neurons caused by chemotherapy. Aegera’s significant intellectual property assets and experience in apoptosis and signal transduction have driven the development of multiple therapeutic products for cancer treatment.

NSERC Researchers
Aegera Therapeutics was founded by Drs. Alex MacKenzie, Robert Korneluk, David Kaplan, Freda Miller and Phillip Barker. Dr. Korneluk is a professor of biochemistry, microbiology and immunology at the University of Ottawa. He is also the director of molecular genetics at the Children’s Hospital of Eastern Ontario Research Institute. The family of genes encoding Inhibitors of Apoptosis (IAPs), discovered by Drs. Korneluk and Alex MacKenzie, led to the creation of a biotech company, Apoptogen. Apoptogen merged with Exogen Neurosciences and formed the company now known as Aegera Therapeutics. One of Drs. Korneluk and MacKenzie’s major research interests is the characterization of the gene responsible for myotonic muscular dystrophy, a gene that had been identified and cloned by their research group in 1992. Their work on myotonic dystrophy and on apoptosis has been supported by grants from NSERC and the Canadian Genetic Diseases Network (CGDN), a Network of Centres of Excellence.
A/F Protein Canada, a subsidiary of A/F Protein Inc., Waltham, Massachusetts, operates from St. John’s, Newfoundland.

NSERC Researchers
A/F Protein Canada and its subsidiaries were founded to commercialize the discoveries of Drs. Garth Fletcher and Choy Leong Hew. Dr. Fletcher is a Professor Emeritus at the Ocean Sciences Centre at Memorial University of Newfoundland. Dr. Hew was a professor of clinical biochemistry at the Banting Institute of the University of Toronto and the Hospital for Sick Children. Both Drs. Fletcher and Hew received NSERC Discovery and Strategic Project Grants to explore and develop antifreeze protein technology.
AgriGenomics Inc.
President and Chief Executive Officer: Dr. Allen Good
PO Box 67034, Meadowlark Postal Outlet, Edmonton, Alberta   T5R 5Y3
Tel.: (780) 433-8247   Fax: (780) 433-8257
E-mail: info@agrigenomics.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: Confidential
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Agriculture, Forestry and Fishing
WEB SITE: www.agrigenomics.ca

Products or Services
AgriGenomics is developing and field-testing technologies designed to increase crop yield. Its technologies have the added benefit of reducing the chemical inputs required to achieve high plant growth. AgriGenomics’ technologies are of tremendous value, not only to the agriculture industry, but also to the forestry and turf grass industries.

AgriGenomics’ technology focuses on the root system, also known as the plant-soil interface. The company is working on leading-edge genetic and molecular biology techniques to reduce the amount of fertilizers required to grow crop plants, and to enable plants to grow in areas prone to drought and salinity.

Nitrogen is the most important factor affecting crop growth worldwide. Globally over 85 million tons of nitrogen are used each year at a cost of approximately $35 billion. Nitrogen-based fertilizers typically account for 40 per cent of the costs associated with producing crops such as corn and wheat. AgriGenomics has patented a gene that increases the efficient use of nitrogen in plants, enabling them to flourish despite low nitrogen levels in the soil. Ultimately, this will reduce the expense of adding nitrogen-based fertilizers.

The goal of AgriGenomics’ is to reduce the amount of chemical inputs, such as nitrogen-based fertilizers, fungicides and insecticides, required to grow crops, thus reducing the amount of pollutants in the soil, air and water.

NSERC Researchers
Dr. Allen Good, president and CEO of AgriGenomics, is a professor in the Department of Biological Sciences at the University of Alberta. Dr. Good discovered that a number of the transgenic plants he produced displayed enhanced nitrogen efficiency and utilization. This research, funded by an NSERC Strategic Project Grant and an NSERC/Agriculture and Agri-Food Canada grant, was the basis for starting AgriGenomics. Dr. Good has received NSERC Discovery, Research Tools and Instruments, Strategic Project, and Collaborative Research and Development Grants.
Albacore Research Ltd.

President: Rolf Oetter
3960 Quadra Street, Suite 304, Victoria, British Columbia V8X 4A3
Tel.: (250) 479-3638 Fax: (250) 479-0868
E-mail: info@shipconstructor.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 20
YEAR INCORPORATED: 1991
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.shipconstructor.com

Products or Services
Albacore Research develops ShipConstructor, the easy-to-use, AutoCAD-based, 3D product modeling software for the design and fabrication of ships and offshore structures.

ShipConstructor handles all 3D modeling aspects of ship design, including hull-fairing, lofting, structure, equipment, piping, penetrations and HVAC. The generation of production drawings and reports is fully integrated with build strategy planning, plate nesting, profile nesting, assembly drawing and spool drawing generation, as well as NC-coding. All modules are completely integrated with an SQL database for easy project management and integration with any other database system within your company.

The centralized database provides project standards and libraries, enforcing consistent drawings. All drawings and parts are linked to a high performance SQL Server database. Security privileges allow for real-time access to the same integrated product model for all users while preventing accidental data corruption.

ShipConstructor is designed to be scalable, giving smaller shipping yards and design offices the same powerful tools as it offers to the largest customers. By separating the software suite into task-based modules, ShipConstructor can be customized into a package that best suits its users.

NSERC Researchers
Albacore Research was founded by Doug Dark, Doug Blake, Rolf Oetter, the company’s president, and Dr. Geoffrey W. Vickers, professor of mechanical engineering at the University of Victoria. Dr. Vickers’ research on robotics in the shipbuilding industry was supported by an NSERC Discovery Grant. His current research interests lie in CAD/CAM and advanced manufacturing.
AMIRIX Systems Inc.

Chief Executive Officer: Sandra Greer
77 Chain Lake Drive, Halifax, Nova Scotia   B3S 1E1
Tel.: (902) 450-1700   Fax: (902) 450-1704
E-mail: www.amirix.com/contact

ANNUAL REVENUE: $8,000,000
NUMBER OF EMPLOYEES IN CANADA: 70
YEAR INCORPORATED: 1981
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Engineering and Scientific Services
WEB SITE: www.amirix.com

**Products or Services**

AMIRIX Systems provides custom embedded systems and electronic design services to help companies develop new products and enhance existing ones. Core capabilities include high performance board design and integration, programmable logic design and embedded software design. An ISO 9001:2000 certified company, AMIRIX tackles complex design challenges by performing in-depth system analyses and crafting optimal technology solutions without any hardware or software bias. The company’s design solutions are flexible, time-to-market efficient and cost effective and are found in defence/aerospace applications, medical devices, industrial controls and communications platforms.

AMIRIX’s design services include architectural system design, detailed system design and implementation, prototype and production manufacturing, system integration, and system redesign.

The company’s AP100 PCI Platform FPGA Development Board is a PCI card with a Xilinx Virtex-II Pro™ FPGA that provides designers with an instant, “out-of-box” system for developing embedded FPGA System-on-a-Chip (SoC) solutions using the Virtex-II Pro. The board, which comes configured as a single board computer complete with monitor software and TimeSys Linux, provides an advanced design starting point to significantly improve time-to-market and reduce development costs. Additional platform modules and accessories are available from AMIRIX to support the development of programmable systems design on the AP100 family of boards. AMIRIX also offers competitively priced custom derivative designs through its supporting design services.

VEMCO, a product division of AMIRIX, designs and manufactures underwater acoustic telemetry and tracking equipment for fisheries, biologists, aquatic research specialists and scientists who are studying the behaviour patterns of marine and freshwater animals. VEMCO supplements its own development resources with AMIRIX’s extensive R&D capabilities to enhance its current product line and bring new product ideas to fruition faster. VEMCO exports to customers in 52 countries spanning six continents.

**NSERC Researchers**

AMIRIX Systems was founded by Dr. Douglas Pincock, a former professor of electrical engineering at the Technical University of Nova Scotia, now part of Dalhousie University. Dr. Pincock’s research on underwater telemetry was supported by NSERC through Discovery Grants.
AQUA Bounty Canada Inc.

Chief Executive Officer: Dr. Garth Fletcher
PO Box 21233, St. John's, Newfoundland and Labrador A1A 5B2
Tel.: (709) 738-4638  Fax: (709) 738-4644
E-mail: mail@aquabounty.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 30
YEAR INCORPORATED: 1994
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.aquabounty.com

Products or Services
AQUA Bounty Canada is developing rapidly growing transgenic brood stocks of Atlantic salmon and rainbow trout that contain a patented chimeric “all fish” gene construct. The gene consists of an antifreeze gene promoter linked to a salmon growth hormone gene. These fish grow significantly faster than standard salmon and are capable of reducing time-to-market by a year. The company is also working to apply this transgenic technology to other species, such as tilapia and marine flatfish.

AQUA Bounty’s goal is to use biotechnology to improve the productivity of the aquaculture industry. Products currently being developed include growth-enhanced genetically modified salmon, trout and tilapia. Future research will involve expanding this technology to include enhanced growth, and cold and disease resistance in finfish, shrimp and other species.

AQUA Bounty Canada, which is a subsidiary of Aqua Bounty Farms Inc., in Waltham, Massachusetts, has operations in Newfoundland and Prince Edward Island.

NSERC Researchers
AQUA Bounty Canada and its subsidiaries were founded to commercialize the discoveries of Drs. Garth Fletcher and Choy Leong Hew. Dr. Fletcher is a Professor Emeritus at the Ocean Sciences Centre of Memorial University of Newfoundland. Dr. Hew was a professor of clinical biochemistry at the Banting Institute of the University of Toronto and the Hospital for Sick Children. Both Drs. Fletcher and Hew received NSERC Discovery and Strategic Project Grants to develop emerging transgenic technology for aquaculture applications.
Aurora Instruments Ltd.

Chief Executive Officer: Dr. Dong C. Liang
1001 East Pender Street, Vancouver, British Columbia   V6A 1W2
Tel.: (604) 215-8700   Fax: (604) 215-9700
E-mail: info@aurora-instr.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: Confidential
YEAR INCORPORATED: 1990
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Chemicals and Materials
WEB SITE: www.aurora-instr.com

Products or Services
Aurora Instruments specializes in the development, production and sale of atomic absorption spectrometers, the Atomic Fluorescence Spectrometer and other analytical instruments. Aurora’s products have been featured in a number of journal articles and on the cover of such publications as Spectroscopy and Chemical Engineering News since the debut of its patented Capacitively Coupled Plasma source at Chicago’s 1991 Pittcon conference.

Aurora’s AI 1100 and 2100 Atomic Absorption/Plasma Emission Spectrometers feature a 3D autosampler, powerful Windows-based software and unique applications. Aurora’s product line can provide an entire laboratory’s needs in elemental analysis, including environmental, mining, metallurgical, semiconductor, food, educational, medical, energy, utility and agricultural laboratories.

With the help of NSERC funding, Dr. Dong Liang developed Aurora Instruments’ Capacitively Coupled Plasma (CCP) source. CCP combines the merits of GFAAS (Graphite Furnace Atomic Absorption Spectroscopy) and ICP-AES (Inductively Coupled Plasma-Atomic Emission Spectroscopy) to produce a highly sensitive yet cost-effective method of analysis.

NSERC Researchers
The co-founders of Aurora Instruments are Dr. Dong Liang, the company’s chief executive officer, and chemistry professor Dr. Michael Blades from the University of British Columbia. Dr. Liang has more than 25 years’ experience in analytical instrumentation techniques. Dr. Blades has received several NSERC Discovery and Research Tools and Instruments Grants over the past 20 years. His research interests involve the development and application of optical and mass spectroscopic methods for chemical analysis.
Axela Biosensors Inc.

President and Chief Executive Officer: Rocky Ganske
480 University Avenue, Suite 910, Toronto, Ontario   M5G 1V2
Tel.: (416) 260-9050  ext. 2251   Fax: (416) 260-9255
E-mail: Not listed

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 14
YEAR INCORPORATED: 2001
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.axelabiosensors.com

Products or Services
Axela Biosensors is commercializing new innovative products using Diffractive Optics Technology (DOT™), an optically based biosensor that uses a novel photonics method for signal enhancement and identification. The DOT™ System, comprised of the DOT™ Reader and DOT™ Sensor, provide a “Point of Science” solution to the understanding of biomolecule interactions. It is no longer necessary to move samples to a central facility for analysis. The DOT™ System provides a compact bench-top solution that enables scientists and medical researchers the ability to ascertain time critical, high value data at the bench.

The DOT™ Sensor is an optical biosensor that uses microfluidics and photonic technology to offer unique benefits to users by delivering critical, high-value information about multiple interactions of biomolecules with targets simultaneously in the same sample without the use of labels.

The DOT™ Reader is a bench-top-sized instrument that detects biomolecular interactions occurring on the surface of the DOT™ Sensor, interprets these results and presents them to the user through a software interface.

NSERC Researchers
Axela’s Diffractive Optics Technology (DOT™) is based on initial research developed by Dr. Cynthia Goh at the University of Toronto. Dr. Goh is a professor of chemistry at the University of Toronto and was Axela’s chief scientific officer. Her research on the fundamental science that underlies the technology used in the company’s DOT™ products, which in turn led to the formation of the company, was funded by NSERC Discovery Grants. Dr. Goh has broad-ranging interests, from photonics and lasers, to single molecule studies and developments in probe microscopy, to protein aggregation and tissue engineering.
Axiocom Inc.

Founding President and Chief Technology Officer: Daniel Massicotte
1350 Royale Street, Suite 401, Trois-Rivières, Quebec  G9A 4J4
Tel.: (819) 697-2946  Fax: (819) 697-0917
E-mail: info@axiocom.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 6
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Telecommunications
WEB SITE: www.axiocom.com

Products or Services
The research company Axiocom focuses on the creation, development and integration into microelectronic technology of interference elimination algorithms designed to improve the transmission of digital signals. It develops and markets solutions that provide network operators and telecommunications equipment manufacturers with a technological edge and commercial leadership.

The implementation of third-generation (3G) digital communication systems requires new infrastructures and new products to facilitate wireless Internet access, the transmission of non-voice signals (audio, video, etc.) and the integration of better voice transmission solutions. Wideband Code Division Multiple Access (WCDMA) and CDMA2000 have replaced 2G and 2.5G communication systems as access technologies. Axiocom offers cutting-edge solutions to multiple interference elimination for WCDMA, CDMA2000 and TD-SCDMA access technologies (where multiple users use a single broadband channel) that include multiple user detection and multiple channel estimation. The technologies used for Axiocom’s 3G communication systems increase the number of users per cell, improve capacity, data transmission performance for high-speed services and the longevity of mobile unit batteries, and provide greater protection against channel interference.

NSERC Researchers
Daniel Massicotte is a professor of electrical engineering at the Université du Québec à Trois-Rivières. He established the integrated systems and signals laboratory (LsNSI) at the university in 1999 and later that same year founded the research company Axiocom, of which he is president and chief technology officer. Dr. Massicotte has more than 10 years of experience in the fields of advanced signal processing technologies and microelectronics and has a great deal of expertise in the communication applications and measurement systems sector. His research was initially funded by graduate fellowships and NSERC Discovery Grants.
Axis Photonique Inc.

President: Christian-Yves Côté
1650 Lionel-Boulet Boulevard, Varennes, Quebec J3X 1S2
Tel.: (450) 929-8209 Fax: (450) 929-8201
E-mail: info@axis-photon.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 5
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Components and Parts
WEB SITE: www.axis-photon.com

Products or Services
Axis Photonique develops and manufactures instruments for scientists who use femtosecond lasers to study ultra-fast events in physics and chemistry.

The company offers unique streak cameras capable of recording the time sequence of ultrafast events.

Axis Photonique’s main clients are university laboratories and research centres in Canada, France, the United Kingdom, Germany and the United States.

NSERC Researchers
Axis Photonique Inc. was created by Dr. Christian-Yves Côté, a former doctoral student in Dr. Jean-Claude Kieffer’s research laboratory at the Institut national de recherche scientifique (INRS) - Énergie et Matériaux, where the development of streak cameras was supported by NSERC.

Dr. Kieffer, a professor at the INRS, has been supported by NSERC Strategic, Discovery, and Research Tools and Instruments Grants.

Dr. Côté, now Axis’ president, received an NSERC Postgraduate Scholarship and a University Undergraduate Student Research Award. Axis Photonique is also a partner in the Canadian Institute for Photonics Innovations, a Network of Centres of Excellence.
Barrodale Computing Services Ltd.

President: Dr. Ian Barrodale
PO Box 3075 Stn. CSC, Victoria, British Columbia V8W 3W2
Tel.: (250) 472-4372   Fax: (250) 472-4373
E-mail: info@barrodale.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 1978
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.barrodale.com

Products or Services
Barrodale Computing Services (BCS) has been providing effective and efficient software solutions to technical problems involving complex data since 1978.

Since 1995, BCS has focused its development skills and experience on object-relational database management systems (ORDBMS) to provide solutions for various geo-spatial applications. For example, the company has produced an interactive watershed atlas of British Columbia. This 1:20,000 digital atlas, which contains more than half a billion 3D survey points, one million lakes/marshes/swamps, and three million stream segments, is stored in an ORDBMS that can be accessed via the Internet.

Most recently, the company has developed a very efficient ORDBMS technology that supports database storage, update and fast retrieval of gridded data. A typical application could extract location-specific meteorological data from a 4D gridded database that contains multiple weather-related values stored for extensive ranges of latitude, longitude, altitude and time. Other applications could involve multi-dimensional grids of oceanographic, seismic, geomatic or medical data.

BCS has successfully completed more than 400 software development contracts for many different clients in the public and private sectors, including ministries and Crown corporations of the Government of British Columbia, Canadian federal government departments, and U.S.-based Fortune 500 companies.

NSERC Researchers
Barrodale Computing Services is wholly owned by its two founders, Ian and Sheila Barrodale. Dr. Ian Barrodale was formerly a professor of mathematics and founding chair of the Computer Science Department at the University of Victoria. His research was supported by NSERC through Discovery Grants.
BioAxone Therapeutic Inc.

President and Chief Executive Officer: Dr. Frank Bobe
3575 Du Parc Avenue, Suite 5322, Montréal, Quebec   H2X 3P9
Tel.: (514) 282-9990   Fax: (514) 343-5755
E-mail: info@bioaxone.com

Annual Revenue: Confidential
Number of Employees in Canada: 32
Year Incorporated: 2000
Stock Market Listing: Not listed
Industrial Sector: Pharmaceuticals/Biotechnology
Web Site: www.bioaxone.com

Products or Services
BioAxone Therapeutic is a privately owned neuroscience company specialized in the development and commercialization of proprietary technologies that target Rho signaling. Rho is a signaling protein which causes cell death if abnormally activated, which applies to medical indications that include central nervous system (CNS), ophthalmology, cancer and related fields. BioAxone Therapeutic is a product-driven company, with one product near clinical, three products in preclinical, and a strong R&D program focused on new product development. The company has demonstrated expertise in recombinant protein product development and has a focused small molecule program.

Key areas of clinical interest will be developed within the company. These key areas include spinal cord injury, traumatic brain injury, macular degeneration and neuro-oncology.

NSERC Researchers
Dr. Lisa McKerracher is the founding scientist and chief scientific officer of BioAxone Therapeutic. She is also a professor in the Department of Pathology and Cell Biology and the Centre for Research in Neuroscience at the Université de Montréal. In addition, Dr. McKerracher is an adjunct professor in the Department of Neurology/Neurosurgery at McGill University. NSERC Discovery Grants helped fund Dr. McKerracher’s work in the field of neural regeneration.
Biomedical Photometrics markets a series of products based on patented confocal imaging technology developed within the company and at the University of Waterloo.

The TISSUEscope™ is a high-resolution digital imaging system for pathology and telepathology. The instrument images the entire area of a microscope slide in a single scan, without the need for tiling, in both brightfield and fluorescence.

The GeneFocus® Division was set up to address the genetic microarray and drug discovery marketplace. The DNAscope™ IV, V and LM are designed to read genetic microarrays on glass microscope slides, and the Open Frame Research DNAscope™ is used to develop imaging systems for new microarray technologies. A new confocal microwell plate reader has recently been developed for drug discovery applications.

Biomedical Photometrics has also commercialized the MACROscope®, a confocal imaging system with a wide range of magnification. One application is tissue imaging, where the combination of very large sample size and very high resolution in fluorescence makes it particularly useful for imaging biopsy specimens. The MACROscope® has opened up new applications for confocal imaging in biomedicine, semiconductor materials and device characterization, geological sciences, forensic science, cancer detection, and quality control testing. For example, in the fields of materials science and forensics, the MACROscope® can be used for latent fingerprint detection, counterfeit detection and for 3D imaging and comparison of footprints.

NSERC Researchers
Dr. A.E. Dixon, a Professor Emeritus in the Department of Physics at the University of Waterloo, founded Biomedical Photometrics with optometry professor Dr. Melanie Campbell and Dr. Brian Wilson, head of medical physics at Princess Margaret Hospital in Toronto, to commercialize the MACROscope® technology. Dr. Dixon’s research has been supported for over 20 years by NSERC Discovery, Collaborative Research and Development, and Strategic Project Grants. Dr. Campbell has also received NSERC Discovery, Research Tools and Instruments, and Strategic Project Grants.
Biomira Inc.

President and Chief Executive Officer: Dr. Alex McPherson
2011 94th Street, Edmonton, Alberta T6N 1H1
Tel.: (780) 450-3761 Fax: (780) 450-4772
E-mail: bwickson@biomira.com

ANNUAL REVENUE: $8,000,000
NUMBER OF EMPLOYEES IN CANADA: 106
YEAR INCORPORATED: 1985
STOCK MARKET LISTING: TSX: BRA Nasdaq: BIOM
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.biomira.com

Products or Services
Biomira, one of Canada’s oldest biotechnology companies, is applying its leading technology in immunotherapy and organic chemistry to the development of cancer therapeutics. The company’s commitment to the development of products for the treatment of cancer is currently focused on synthetic therapeutic vaccines and innovative strategies for immunotherapy of cancer. Biomira’s motto is: We are the Cancer Vaccine People™.

Biomira’s lead product candidate, BLP25 Liposome Vaccine, has completed a Phase IIb study in non-small cell lung cancer (NSCLC). The trial involved 171 men and women in Canada and the U.K. Further survival data is expected to be presented at a scientific forum and published in 2005. The likelihood is that the company and its collaborator, Merck KGaA of Darmstadt, Germany, will move into a larger confirmatory study towards the end of 2005.

NSERC Researchers
Biomira was co-founded by immunologist Dr. Michael Longenecker and pharmacologist Dr. Antoine Noujaim of the University of Alberta. Dr. Noujaim’s research has been supported through NSERC Strategic Project Grants for his research on radio immunoconjugates, once used in some of Biomira’s products.

RESEARCH MEANS BUSINESS
BIOREM Technologies Inc.

President: Brian P. Herner
7496 Wellington Road, Unit 34, RR 3, Guelph, Ontario N1H 6H9
Tel.: (519) 767-9100 Fax: (519) 767-1824
E-mail: bherner@biorem.biz

ANNUAL REVENUE: $10,000,000
NUMBER OF EMPLOYEES IN CANADA: 21
YEAR INCORPORATED: 1990
STOCK MARKET LISTING: TSX-V: BRM
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.biorem.biz

Products or Services
BIOREM Technologies is North America’s fastest growing biofilter odour control company. Since introducing BIOSORBENS™, the first completely inorganic ten-year biofilter medium, U.S. sales of custom pre-packaged BIOFILTAIR™ and integrated modular BASYS™ biofilter systems have skyrocketed. Benefits of the revolutionary BIOSORBENS™ media include compact, high-performance equipment for odour and volatile organic (VOC) compound removal, unparalleled reliability, and easy operation and monitoring. With over 100 installations across the country providing the lowest operating and maintenance costs of any odour or VOC control technology, it’s easy to understand why BIOREM’s BASYS™, BIOFILTAIR™ and SYNERGY™ systems have become North America’s favourite biofilter.

Over 100 biofilter projects have been undertaken across North America, in a wide variety of industries and municipal odour control applications. Installations as large as 276,000 cfm (cubic feet per minute) have been undertaken, with projects up to $3,500,000 in value.

NSERC Researchers
BIOREM Technologies founder Dr. Owen Ward heads the Microbial Biotechnology Laboratory at the University of Waterloo. Dr. Ward’s research program has received support from NSERC Strategic Project, Discovery, and Collaborative Research and Development Grants. His research now focuses on extracellular enzymes, biotransformations, biodegradation, bioremediation and lipids.
Products or Services

BIOX uses its revolutionary new technology to produce the highest quality, renewable, non-toxic and biodegradable biodiesel fuel. The BIOX Process turns any feedstock, including vegetable oils, agricultural seed oils, animal fats/greases and recycled cooking oils into biodiesel fuel at a cost competitive with petroleum diesel.

BIOX has a substantial competitive advantage over any production method used today. Due to the low cost of its production and its ability to utilize virtually any type of feedstock (including any animal fats or oils) with the ability to actually convert both the triglyceride and the free fatty acid portion into biodiesel, it is the only process that can compete with petroleum diesel on a cost basis. Other processes that employ either a high-temperature or high-pressure procedure develop product that is not competitive on a cost basis with petroleum-based diesel. This new technology makes biodiesel the most cost-effective green fuel available and competitive with petroleum diesel on the market.

NSERC Researchers

Dr. David Boocock, a chemical engineering professor at the University of Toronto, developed the biodiesel production technology, now known as the BIOX Process. His research on biodiesel fuels has been supported by NSERC Discovery, Collaborative Research and Development, Strategic Project, and Research Tools and Instruments Grants since 1979.
Boreal Laser Inc.

President: Jack Ondrack
13-51127 Range Road 255, Spruce Grove, Alberta T7Y 1A8
Tel.: (780) 987-4382 Fax: (780) 987-2418
E-mail: info@boreal-laser.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 5
YEAR INCORPORATED: 1987
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Engineering and Scientific Services
WEB SITE: www.boreal-laser.com

Products or Services
Boreal Laser makes laser-based gas detectors, portable or fixed, for methane, carbon dioxide, ammonia, hydrogen fluoride, hydrogen sulphide, hydrogen cyanide and other gases. Patented technology enables these detectors to be remarkably small and inexpensive. Applications include leak detection, process control and monitoring of emissions in upstream oil and gas facilities, refineries, aluminum smelters, fertilizer plants, power plants, mines and agricultural operations. Boreal also provides ultra-fast response methane detectors for detecting gas pipeline leaks from aircraft. Using CO2, CH4 or N2O measurements, simultaneous meteorological data and the EPA’s ISCST3 model, Boreal provides greenhouse gas emission measurements for industry, in many instances replacing estimates subject to large errors.

At the December 1997 Kyoto conference, Boreal measured methane emissions from the Environment Canada booth. Thanks to such exposure, Boreal has been able to export its technology abroad, measuring emissions for foreign companies interested in trading greenhouse gas credits.

NSERC Researchers
Electrical engineering professor Dr. John Tulip founded Boreal Laser and serves as the company’s technical director. His research on lasers at the University of Alberta has been supported by NSERC through Discovery, Strategic Project, Collaborative Research and Development, Research Tools and Instruments, and Infrastructure Grants since 1979. His current research interests lie in photodynamic therapy, cardiovascular lasers, and search and rescue lasers.
BrightSide Technologies Inc.

Chief Executive Officer: Richard MacKellar

1310 Kootenay Street, Vancouver, British Columbia   V5K 4R1
Tel.: (604) 228-4624   Fax: (604) 228-4622
E-mail: richard.mackellar@brightsidetech.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 14
YEAR INCORPORATED: 2002
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.brightsidetech.com

Products or Services
BrightSide Technologies is a privately held company developing and commercializing ground-breaking electronic display technologies.

BrightSide Technologies is currently developing a new high-brightness display technology called HDR (High Dynamic Range). The technology offers more brightness and contrast ranges than existing CRT, plasma or LCD televisions and computer monitors. Images displayed on HDR technology show more of the true range of luminance we observe in the real world.

The company has established several promising commercial opportunities for the technology and is working with leading component and device manufacturers towards the production of HDR, while also exploring possible development, manufacturing and marketing partnerships.

NSERC Researchers
BrightSide Technologies, formerly known as Sunnybrook Technologies, was founded by Helge Seetzen, the company’s director of technology, Don Graham, and Drs. Lorne Whitehead and Michele Mossman. Together they developed the display technology commercialized by BrightSide over a six-year period at the Structured Surface Physics Laboratory at the University of British Columbia. Dr. Lorne Whitehead is a professor of physics, vice president academic and provost of the University of British Columbia. He holds the 3M/NSERC Chair for Structured Surface Physics and is recognized internationally for inventing the Prism Light Guide System. NSERC funded a major component of the research on the display technology that led to the formation of BrightSide with Strategic Project, and Collaborative Research and Development Grants. Dr. Michele Mossman is a research associate in applied physics at the University of British Columbia. She received two NSERC Undergraduate Student Research Awards and Postgraduate Scholarship to support her master’s and doctoral studies.
BytePress

Chief Operating Officer: Dr. Bipin C. Desai
11 Brynmor Avenue, Montréal, Quebec   H4X 2A8
Tel.: (514) 488-9822   Fax: Not listed
E-mail: bcdesai@ideas.concordia.ca

Products or Services
BytePress specializes in security technology designed to protect entertainment and intellectual property online. As file-sharing Web services continue to allow access to copyrighted material at no cost, record company executives, on-line retailers and digital service providers are urgently seeking a solution to the problem. BytePress has the answer.

BytePress’ Digital Right Management (DRM) system is a groundbreaking data encryption tool. DRM will protect and limit access to copyrighted digital content available on the Internet. This includes music, movies, software, and technical literature.

BytePress intends to publish its own encrypted material on-line, and has recently perfected a demonstration of the DRM technology aimed at the entertainment industry.

NSERC Researchers
BytePress’ founder and chief operating officer, Dr. Bipin C. Desai, is an expert in digital rights management, digital libraries, computer architecture and database information systems. He is a professor of computer science at Concordia University and general chair of IDEAS – an ongoing series of international symposia on database engineering and application. In addition to various industrial and governmental grants and contracts, Dr. Desai’s research has been supported by NSERC Discovery Grants.
CanBiocin Inc.

President and Chief Executive Officer: Dr. Michael E. Stiles
1015 Research Transition Facility
8308 114th Street, Edmonton, Alberta T6G 2E1
Tel.: (780) 436-5228  Fax: (780) 436-5228
E-mail: canbiocin@ualberta.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 5
YEAR INCORPORATED: 1998
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: Not listed

Products or Services
CanBiocin’s founders have discovered strains of lactic acid bacteria that occur naturally in meat and have found a way to use them to extend the shelf life and safety of fresh, prepared and processed meat.

Some lactic acid bacteria naturally produce antibacterial peptides, known as bacteriocins, that inhibit the growth of spoilage and pathogenic bacteria. CanBiocin’s technology involves the addition of bacteriocinogenic lactic acid bacteria to vacuum-packaged, refrigerated meats. This has been shown to eliminate hazardous strains of Listeria monocytogenes from meats.

The CanBiocin technology has also been targeted against intestinal pathogens in farm animals using lactic acid bacteria, for example the control of scours in weanling pigs.

NSERC Researchers
CanBiocin was formed to commercialize the discoveries of University of Alberta professors Drs. Michael Stiles, Lynn McMullen and John Vederas. A food microbiologist, Dr. Stiles worked to improve the safety of food throughout his academic career. He has received NSERC Discovery, Research Tools and Instruments, and Strategic Project Grants for his research since 1980. His longtime colleague Dr. Lynn McMullen is an associate professor in the Department of Agricultural, Food and Nutritional Science at the University of Alberta. Her current research focuses on food packaging and food safety. NSERC has funded her research on bacteriocins with Discovery Grants. Dr. John Vederas is a university professor of chemistry and a fellow of the Royal Society of Canada. He also holds the Canada Research Chair in Bioorganic and Medicinal Chemistry. His research on bioorganic chemistry has been funded by NSERC since 1978.
CARIS

Chief Executive Officer: Dr. Salem Masry
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E-mail: info@caris.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 125
YEAR INCORPORATED: 1979
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.caris.com

Products or Services
From its headquarters in New Brunswick, CARIS develops and supports rigorous, technologically advanced geomatics software. The company’s systems give value to spatial data and empower its customers with information that is meaningful.

CARIS has been at the forefront of the movement toward computer-aided cartography and mapping since its founding in 1979 and is surging geomatics technology further with its open, flexible Internet and database-driven technologies.

Today, CARIS offers a robust line of spatial information management software for customers across land and marine applications. Its product line enables customers to input, create and manage, and deliver consistently reliable spatial data information and products.

In addition to its New Brunswick headquarters, CARIS also operates from a European subsidiary office in The Netherlands and an office in the United States.

There are also more than 40 resellers bringing sales and support of CARIS brand software to more than 70 countries. In 2003, more than 70 per cent of revenue was from exports with 34 per cent from Europe.

NSERC Researchers
CARIS was founded by Dr. Salem Masry, former professor of geodesy and geomatics engineering at the University of New Brunswick. Dr. Masry helped found the Digital Mapping Laboratory at UNB in the 1980s. NSERC has supported Dr. Masry’s research through Discovery, Infrastructure, and Research Tools and Instruments Grants.
Products or Services
Cell-Loc Location Technologies, a leader in the emerging wireless location industry, is the developer of a family of wireless products that enable location-based services. Cell-Loc uses patented and patent-pending time difference of arrival (TDOA) hyperbolic trilateration to calculate the location of wireless devices such as its own Beacon (wireless radio frequency transmitter). This network-based solution provides a low-cost, highly reliable and accurate solution for fleet tracking, asset tracking, people find, pet find, traffic monitoring and a myriad of wireless Internet applications.

Cell-Loc currently develops, markets and supports its patented wireless location technology worldwide.

NSERC Researchers
Cell-Loc Location Technologies was founded by Dr. Michel Fattouche, the company’s chief technical officer, and Dr. Hatim Zaghloul to commercialize their research findings at the University of Calgary’s Department of Electrical and Computer Engineering. Dr. Fattouche is a tenured professor of electrical and computer engineering at the University of Calgary. Dr. Fattouche’s research was supported by NSERC grants and Dr. Zaghloul held an NSERC postgraduate scholarship.
Certicom Corporation

President and Chief Executive Officer: Ian McKinnon
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ANNUAL REVENUE: $42,890,000 (Fiscal 2004)
NUMBER OF EMPLOYEES IN CANADA: 105
YEAR INCORPORATED: 1985
STOCK MARKET LISTING: TSX: CIC
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.certicom.com

Products or Services
Certicom is the authority for strong, efficient cryptography required by software vendors and device manufacturers to embed security in their products. Adopted by the U.S. government’s National Security Agency (NSA), Certicom technologies for Elliptic Curve Cryptography (ECC) provide the most security per bit of any known public key scheme, making it ideal for constrained environments.

Based on 20 years of research, Certicom’s patent portfolio includes over 300 patents and patents pending worldwide which puts the company at the forefront of groundbreaking research in the field of cryptography and many security developments. As an active participant in international standards organizations, Certicom also provides leadership in the standardization of ECC and other cryptographic technologies by ANSI, IEEE, ISO, NIST/FIPS and other major standards organizations.

Certicom products and services are currently licensed to more than 300 customers including Cisco Systems, Motorola, Oracle, Research In Motion, Sybase, Terayon, Texas Instruments and Unisys.

NSERC Researchers
Certicom’s founders, Drs. Scott Vanstone, Ron Mullin and Gord Agnew, are researchers and members of the Data Encryption Group at the University of Waterloo. Drs. Vanstone and Mullin are professors in the Department of Combinatorics and Optimization, one of the world’s largest cryptographic mathematics departments. Dr. Agnew is an associate professor in the Department of Electrical and Computer Engineering at Waterloo. Dr. Vanstone, the company’s executive vice-president, strategic technology, currently holds the NSERC/Pitney Bowes Senior Chair of Cryptography and is the executive director for the Centre for Applied Cryptographic Research (CACR). The CACR’s mandate is to advance research, research training, university-industry collaboration and discoveries in the cryptography industry. Dr. Vanstone’s research has been supported by NSERC Discovery, Collaborative Research and Development, and Strategic Project Grants. Dr. Mullin, a distinguished emeritus professor, has received NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants. Dr. Agnew has been supported by numerous NSERC Discovery Grants.
Chenomx Inc.

President: Neil Taylor
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Tel.: (780) 732-4551    Fax: (780) 432-3388
E-mail: ntaylor@chenomx.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 2000
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Medical Devices and Instrumentation
WEB SITE: www.chenomx.com

Products or Services
Chenomx offers a unique, revolutionary, non-invasive health diagnostics technology designed to improve the speed and efficacy of medical diagnosis.

One small sample of urine or blood can be analyzed quickly and inexpensively to aid in the diagnosis of hundreds of diseases. Chenomx technology is also well suited for use in drug safety and toxicology testing to measure the effects of pharmaceutical drugs on a patient.

Using metabolomics – the science of measuring hundreds of metabolic indicators – Chenomx technology builds an individual health profile using metabolic indicators and markers. Nuclear Magnetic Resonance (NMR) spectrometers are used to scan small quantities of biological fluid obtained from the subject. Complex software compares the NMR spectra with spectral signatures of pure metabolites developed by Chenomx from thousands of NMR experiments, and calculates the concentration of each of the metabolites in the biological fluid sample.

Chenomx is a private Canadian company located in Edmonton with extensive collaborative relationships. Close research and development links with the University of Alberta are complemented by a strategic marketing and financial agreement with Varian Inc., a world-leading supplier of NMR spectrometers.

NSERC Researchers
Drs. David Wishart and Brian Sykes founded BioTools, which later spun off its diagnostic operations into Chenomx. Dr. Wishart is a professor in the Department of Computer Science and Biological Sciences at the University of Alberta and Chenomx’s past scientific director. Dr. Sykes is professor of biochemistry at the University of Alberta. Both Drs. Wishart and Sykes are NMR spectoscopists who helped develop NMR spectroscopy as a tool for determining health status by looking at metabolites in urine, a technology Chenomx has continued to develop. Dr. Wishart is world renowned for his research on nuclear magnetic resonance spectroscopy, bioinformatics metabolic profiling and protein structural biology. NSERC has supported Dr. Wishart’s research with Discovery Grants. Dr. Sykes has received Major Facilities Access Grants from NSERC.
Chronogen Inc.

President and Chief Executive Officer: Dr. Max Fehlmann
2901 Rachel Street East, Suite 22, Montréal, Quebec   H1W 4A4
Tel.: (514) 521-9595   Fax: (514) 521-1579
E-mail: info@chronogen-inc.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 13
YEAR INCORPORATED: 1998
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.chronogen-inc.com

Products or Services
Chronogen’s mission is the commercialization of novel treatments for age-dependent diseases, with a focus on disorders induced by oxidative damage. With the increase in life expectancy in industrial societies, the study of aging is the focus of a large number of academic, health and welfare, and research institutions. In North America, the average lifespan has increased by 30 years over the course of the 20th century, and today, approximately 40 million people in North America are over 65 years old.

Although many people enjoy a high quality of life as they age, they are nonetheless increasingly susceptible to a wide variety of diseases. This disease prevalence in the aged population, compared to younger age classes, indicates the existence of a strong time-dependent increase in the incidence of cardio- and cerebrovascular disorders, neurodegenerative diseases and cancer.

With the discovery of genes that control aging and the need for a new approach to discover effective treatments, Dr. Siegfried Hekimi, professor of biology at McGill University, founded Chronogen in 1998.

Significant headway towards the identification and validation of target genes has already been made. By streamlining analysis of genetic pathways that determine lifespan in model organisms, Chronogen scientists have discovered metabolic pathways that affect age-dependent diseases, and identified targets ideally suited for drug discovery. These highly conserved pathways are initially identified through the study of the nematode C. elegans.

NSERC Researchers
Dr. Siegfried Hekimi is a world-leading expert in C. elegans genetic analysis and a pioneer in the field of the genetics of aging research on model organisms. A professor of biology at McGill University, Dr. Hekimi has also led Chronogen’s research efforts over the past six years to find and characterize novel groups of genes that can decrease the rate of aging and prolong the lifespan of the nematode worm. NSERC has supported Dr. Hekimi’s research with Discovery, and Research Tools and Instruments Grants.
Comlab Inc.

President: John Ahern
2300 Léon-Harmel Street, Suite 220, Québec, Quebec  G1N 4L2
Tel.: (418) 682-3380  Fax: (418) 682-8996
E-mail: info@comlab.com

ANNUAL REVENUE: $1,200,000
NUMBER OF EMPLOYEES IN CANADA: 16
YEAR INCORPORATED: 1984
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Telecommunications
WEB SITE: www.comlab.com

Products or Services
Comlab has wide-ranging expertise in the field of electrical engineering, specializing in the areas of telecommunications and radio frequency electronics. Since 1984, the company has played a key role as a strategic partner for several Canadian companies.

Comlab’s mission is to provide innovative solutions to problems in diverse industries through the application of radio frequency, microwave and electronics technologies.

NSERC Researchers
Comlab was founded by a team of researchers in the Department of Electrical Engineering at Université Laval: Dr. Gilles Delisle and the late Dr. Michel Lecours, and research assistants Marcel Pelletier and John Ahern. NSERC has supported Drs. Delisle and Lecours with Discovery, Strategic Project, and Research Tools and Instruments Grants for the past 20 years.
Credo Interactive Inc.

President: Sang Mah
999 West Broadway, Suite 720
Vancouver, British Columbia V5Z 1K5
Tel.: (604) 291-6717  Fax: (604) 648-8827
E-mail: info@charactermotion.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 4
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.credo-interactive.com

Products or Services
Credo Interactive is a leading developer of 3D movement animation tools for entertainment, education, multimedia and the arts. The underlying technology for the company’s unique Life Forms animation software was developed at Simon Fraser University. The software is an animation tool for human figure and character animation, and has also proven highly valuable in sports education, choreography, dance and multimedia content development. Complex motions such as walking and running can be created very easily, and there is support for motion capture data. This software, bundled with unique electronic dictionaries of ballet and modern dance content is marketed as DanceForms and is used extensively for teaching in K-12, colleges and universities around the world. The Life Forms technology is non-exclusively licensed to other companies for specialized applications of avatars for 3D on-line environments by Worlds Inc. (U.S.).

Leveraging their roots in award-winning products, Credo also provides customized strategic solutions to create compelling content and technology for applications. The company’s expertise ranges from implementation of everything to do with 3D character animation. This includes 3D virtual environments, characters and avatars, gaming development, and wireless communication. Credo is active in project consulting, production services, contract software development and technology partnerships.

NSERC Researchers
Life Forms, Credo Interactive’s lead software, was developed by Dr. Tom Calvert and his team of graduate students at Simon Fraser University. This research project was initially a collaboration between Dr. Calvert, a number of dance teachers and New York choreographer Merce Cunningham. The research was supported by NSERC and the Social Sciences and Humanities Research Council of Canada. Dr. Calvert’s research has received NSERC support through Discovery, Infrastructure, and Research Tools and Instruments Grants. He is currently a theme leader in the NSERC-funded LORNET Network.
CVD Diamond has developed proprietary technology for the production of pure diamond films, which have a thickness of up to 40 microns (µm). While diamond film can be used for a number of applications due to its properties, CVD Diamond has decided to concentrate on the exploitation of its extreme hardness and wear resistance. The company focuses on diamond coatings on cutting tools for the machining of non-ferrous materials where tool life can be extended by at least an order of magnitude over tungsten carbide tools.

The company’s diamond films are extremely homogeneous, which results in longer life and more consistent performance. Careful selection of substrates and the company’s proprietary preparation techniques allows excellent adhesion of the diamond film to the tool. The combination of these technologies results in the longest lasting tools available on the market today.

CVD Diamond offers a complete line of diamond-coated end mills for the machining of non-ferrous materials, ranging from cutting diameters of 1/64” to 1/2”.

**NSERC Researchers**

In the 1990s, Drs. Leo Lau and Biwu Sun, researchers at the University of Western Ontario, were able to produce pure diamond films by chemical vapour deposition (CVD) and founded CVD Diamond to further the technology. Dr. Lau, now dean of science at the Chinese University of Hong Kong, has been supported by NSERC Collaborative Research and Development, Strategic Project, Industrially Oriented Research, and Discovery Grants.
DALSA Corporation

Chairman and Chief Executive Officer: Dr. Savvas Chamberlain
605 McMurray Road, Waterloo, Ontario N2V 2E9
Tel.: (519) 886-6000 Fax: (519) 886-8023
E-mail: sales.americas@dalsa.com

Products or Services
DALSA is an international high-performance semiconductor and electronics company that designs, develops, manufactures and markets digital imaging products and solutions, in addition to providing semiconductor products and services. DALSA’s core competencies are in specialized integrated circuit and electronics technology, software and highly engineered semiconductor wafer processing. Products and services include image sensor components; electronic digital cameras; vision processors; image processing software; and semiconductor wafer foundry services for use in MEMS, high-voltage semiconductors, image sensors and mixed-signal CMOS chips.

The company has its corporate offices in Waterloo, Ontario and over 1,000 employees worldwide.

NSERC Researchers
DALSA was initially founded as a consulting firm by Drs. Savvas Chamberlain and David Roulston of the Department of Electrical and Computer Engineering at the University of Waterloo. Both researchers are specialists in microelectronics and integrated circuit design. Dr. Roulston withdrew from the company in 1983 to focus on his research, while Dr. Chamberlain capitalized the company in 1984 and later expanded it. Both Drs. Chamberlain and Roulston have received NSERC support since 1978. Dr. Chamberlain is a Fellow of the IEEE, a member of Micronet, and a winner of the NSERC-Information Technology Association of Canada award for academic excellence. In the technical and scientific community, he is a recognized pioneer in the area of CCDs, Metal Oxide Semiconductor/Field Effect Transistors (MOSFETs) and active pixel sensor technology.
Products or Services
Datec Coating offers a new process for producing high-quality ceramic coating materials. The Datec process can be used to improve the performance of existing materials or to create new, innovative products.

Ceramics are typically hard, inert materials that do not rust, wear or wet as easily as metals. By depositing a ceramic layer on the surface of metallic components, Datec can extend the service life or enhance the performance of metallic materials that operate in hazardous environments. Datec has also used its novel technology to create a range of ceramic coatings capable of generating heat. The company has initiated an extensive research program aimed at developing highly efficient heating elements where the heater is a coating directly attached to the material being heated. This low-profile design improves efficiency and performance and allows for the possibility of new designs. Applications for the Datec process range from household appliances and cookware to the automotive, plastics and aerospace industries.

The Datec process involves applying a special ceramic solution or paint to metallic objects and then firing the coated piece at 350°C to bond the two together. The paint can be deposited by spraying, screen-printing, dip-coating or using a paintbrush. The low firing temperature allows the coating to be applied to a wide range of materials, including soft metals such as aluminum and magnesium (both of interest to the automotive industry for lightweight cars). Datec technology has applications in four key sectors: the appliance industry (heating elements), the plastics industry (non-stick coatings), and the automotive/aerospace industries (thermal barriers and corrosion protective layers).

NSERC Researchers
Datec Coating’s ceramic coating process was invented by Dr. Michael Sayer and his students, Drs. David Barrow, Datec’s president, and Ted Petroff, the company’s vice-president. NSERC’s technology partnerships program helped with the commercialization of their invention. Dr. Sayer, Professor Emeritus of physics at Queen’s University, has received NRC/NSERC grants since 1962. Dr. Sayer, Datec and Queen’s University were recognized for the development of the Datec ceramic coating process with a 2001 NSERC Synergy Award for Innovation.
DBMiner Technology Inc.

Acting President: Ping Quin
2125 West 14th Avenue, Vancouver, British Columbia V6K 2V8
Tel.: (604) 739-7862 Fax: Not listed
E-mail: dbminerinfo@yahoo.com

**ANNUAL REVENUE:** Confidential
**NUMBER OF EMPLOYEES IN CANADA:** 5
**YEAR INCORPORATED:** 1997
**STOCK MARKET LISTING:** Not listed
**INDUSTRIAL SECTOR:** Software and Computer Services
**WEB SITE:** www.dbminer.com

**Products or Services**
DBMiner Technology researches and develops data mining and data warehousing technology. The company is a leading provider of automated and real-time on-line analytical processing (analytic) solutions for business performance measurement, customer management and market analysis.

In 2002, Microsoft selected DBMiner as a data mining partner for the SQL Server Accelerator for Business Intelligence, a rapid application development tool. DBMiner’s Insight, the world’s first analytical server powered by data mining on the Microsoft SQL Server 2000 Analysis platform, will provide powerful, scalable and easy-to-use analytics to customers using SQL Servers.

DBMiner provides enterprise users with powerful capabilities to extract more value and knowledge from their business and operational data to make insightful decisions. The DBMiner systems automatically analyze patterns and trends of cross-selling, up-selling, profit optimization, cost reduction for commerce transactions, sales and marketing, customer relationships, customer support, and defect correlations.

The company’s customers include Boeing, Hewlett-Packard and London Drugs.

**NSERC Researchers**
Dr. Jiawei Han, DBMiner Technology’s director of R&D, is a professor of database, data mining, and data warehousing at the University of Illinois at Urbana-Champaign. Dr. Han developed a prototype of DBMiner’s data mining system at Simon Fraser University with research funds from NSERC and the Institute for Robotics and Intelligent Systems (IRIS), a Network of Centres of Excellence. NSERC has consistently supported Dr. Han’s research into database systems and data mining with Discovery, Research Tools and Instruments, and Collaborative Research and Development Grants. Dr. Han has published over 150 research papers and is the author of the best-selling book Data Mining: Concepts and Techniques.
Decision Academic Inc.

President and Chief Executive Officer: John Purdon
280 Albert Street, Suite 600, Ottawa, Ontario   K1P 5G8
Tel.: (613) 233-2365   Fax: (613) 233-5269
E-mail: info@decisionacademic.com

ANNUAL REVENUE: $4,000,000
NUMBER OF EMPLOYEES IN CANADA: 33
YEAR INCORPORATED: 1994
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.decisionacademic.com

Products or Services
Decision Academic is a world leader in bringing student-focused information technology to higher education institutions. For more than a decade, Decision Academic has helped colleges and universities use technology to better manage their administrative operations and provide students with self-service support and better access to information. Products include: student support systems, distance learning systems and student information systems.

Decision Academic is headquartered in Ottawa, with customers and clients across Canada and the United States.

NSERC Researchers
The late Dr. Ivan Rival developed the Degree Navigator software while at the University of Ottawa, which led to the formation of Decision Academic. Dr. Rival’s research activities were supported by NSERC Discovery Grants.
DEL-AIR Systems Ltd.

President: Robert Hawkins
1704 4th Avenue, PO Box 2500, Humboldt, Saskatchewan  S0K 2A0
Tel.: (306) 682-5011   Fax: (306) 682-5559
E-mail: sales@del-air.com

ANNUAL REVENUE: $10,000,000
NUMBER OF EMPLOYEES IN CANADA: 100
YEAR INCORPORATED: 1981
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Agriculture, Forestry and Fishing
WEB SITE: www.del-air.com

Products or Services
The innovative technology that emerged from research at the University of Saskatchewan 17 years ago is now the basis of a commercial system that is keeping livestock happy across the country. This technology was developed at the University of Saskatchewan and is now manufactured by DEL-AIR Systems.

DEL-AIR’s heat exchanger equipment keeps livestock comfortable through winter humidity and saves heating energy. The result is more efficient livestock production systems, with improved animal comfort and more rapid weight gains. DEL-AIR Systems produces rotationally moulded polyethylene housings that are more tolerant of harsh conditions and easier to clean than conventional systems.

NSERC Researchers
The DEL-AIR heat exchanger emerged from early-stage research work directed by Professor Emeritus Robert Besant at the University of Saskatchewan’s Department of Engineering, and funded by an NSERC Strategic Project Grant. Dr. Besant directed experiments with heat transfer and simple plywood and polyethylene plate-type heat exchangers. A member of his research staff saw the commercial potential in air-to-air heat exchangers for both agricultural and residential use, and left the university to develop both the DEL-AIR agricultural heat exchanger and the VanEe residential heat exchanger. Two companies were started to exploit this commercial potential: DEL-AIR Systems for agricultural technology, and Conservation Energy Systems, now known as Venmar CES, for residential buildings. NSERC has supported Dr. Besant’s research with several Strategic Project and Discovery Grants.
DiCOS Technologies Inc.

President and Director of Technology: Jacques Delisle
2716 Einstein Street, Sainte-Foy, Quebec  G1P 4S8
Tel.: (418) 266-6660  Fax: (418) 266-9990
E-mail: info@dicostech.com

**Products or Services**
DiCOS Technologies Inc. is a world leader in smart photonics for absolute calibration and control applications. The company designs and manufactures optical frequency management devices that allow very accurate and reliable calibration of tunable lasers and testing and measurement instrumentation.

DiCOS’s new technology is based on the production of complex optical filters made up of a set of quantum resonances and transmissions characteristic of photonic components. It can be used in wavelength multiplexing frequency locking systems and for accurate interferometric measurement of distances and fine spectrum analysis of optical filters or optical signals.

**NSERC Researchers**
Dr. Michel Têtu, one of DiCOS Technologies Inc.’s founders, is a professor in the Department of Electrical Engineering at Université Laval. The company’s three other founding members are Dr. Jean-François Cliche, vice-president, R&D, Dr. Christine Latrasse, scientific director, and Alain Zarka, test and measurement director. NSERC helped fund Dr. Têtu’s research program at the Centre for Optics, Photonics and Lasers (COPL) at Université Laval, which led to the formation of DiCOS. Dr. Têtu’s research has been supported by NSERC Discovery, Research Tools and Instruments, Collaborative Research and Development, and Strategic Grants for over 30 years.
Droycon Bioconcepts Inc.

President: Roy Cullimore
315 Dewdney Avenue, Regina, Saskatchewan S4N 0E7
Tel.: (306) 585-1762 Fax: (306) 585-3000
E-mail: lori.dbi@accesscomm.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 9
YEAR INCORPORATED: 1987
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.dbi.ca

Products or Services
Droycon Bioconcepts has developed and is manufacturing a range of simple but effective biodetectors to test for specific nuisance bacteria in water. These patented testers were developed in response to the need to detect biofouling and improve the management of significant microbial activities in water wells, wastewater systems, and at hazardous waste sites. Currently, nine different biological activity reaction tests (BART™ testers) are manufactured. Two of the testers have received environmental technology verification through the ETV Canada Inc. program. Most of the product is exported to the United States. Field tests have been performed in the U.S., Europe and South Africa, as well as in Canada. Current developments include a replacement for the five-day biochemical oxygen demand test (BOD-BART system) and a novel coliform bacteria detection test (COLI-BART system).

The company has also been active in the development of systems for rehabilitating biologically plugged water wells using its patented blended chemical heat treatment (BCHT™) system. In conjunction with Agriculture and Agri-Food Canada, the company generated an understanding of this problem in the Canadian prairies. This led to the development of a modification of the BCHT™ treatment process more applicable to the local conditions. This technology is known as the ultra-acid base treatment (UAB™) and has been used in Alberta and Saskatchewan by ARCC Well Rehabilitation Canada Inc., a sister company formed in 2001 to specifically undertake water well rehabilitation.

NSERC Researchers
Droycon Bioconcept’s BART™ technology was founded on the research of Dr. Roy Cullimore in collaboration with George Alford of ARCC. Dr. Cullimore retired as a professor of microbiology at the University of Regina to work full-time for Droycon. He devised the company’s systems in part through the support of the NSERC Discovery Grant program during the 1980s. The University’s Regina Water Research Institute also played a major role in the advancement of the BCHT™ technologies.
Dynacon Inc.

Chief Executive Officer: Stephen J. Sorocky
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E-mail: sjs@dynacon.ca

ANNUAL REVENUE: $4,300,000
NUMBER OF EMPLOYEES IN CANADA: 25
YEAR INCORPORATED: 1980
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.dynacon.ca

Products or Services
Dynacon applies automation and robotics technology for the laboratory and aerospace markets. The company’s capabilities lie in systems integration, analysis and simulation, software and hardware design, and fabrication.

In the laboratory automation market, Dynacon’s InocuLab product line reduces labour cost, increases quality, replaces scarce labour and eliminates exposure to repetitive strain injury. In aerospace, the company develops satellite control systems products, performs advanced systems analyses and constructs complete microsatellites.

Dynacon is the prime contractor for the MOST (Microvariability and Oscillations of STars) microsatellite, Canada’s first space telescope, which was launched on June 30, 2003. MOST is the about the size of a suitcase and weighs only 52 kg. MOST’s science mission is planned for one year during which the telescope will collect science data and make very precise measurements of the brightness of target stars.

Dynacon’s Mini-Reaction Wheel and Gyro-Damper technologies are now being used in high-performance control systems for microsatellite and small satellite applications. The company has also extended its expertise into terrestrial products such as InocuLab – an automated robotic workcell that prepares specimens for microbiology testing. Dynacon has obtained venture capital investment to develop and grow this exciting new product line.

NSERC Researchers
Dr. P.C. Hughes is a Professor Emeritus of space systems engineering at the Institute for Aerospace Studies at the University of Toronto. Dynacon evolved out of a partnership between Drs. Hughes and Dale Cherchas. Dr. Hughes’ research in the area of the dynamics and control of flexible spacecraft has been supported by numerous NSERC Discovery, Collaborative Research and Development, Research Tools and Instruments, and Strategic Project Grants since 1979.
Dynastream Innovations is a Canadian company with world-leading expertise in the research and development of inertial and wireless technology for consumer, commercial, medical and industrial markets.

Originating from the idea of using accelerometers to track and measure motion, Dynastream’s founding partners worked to develop, test and perfect its patented technology before introducing it to potential markets.

In the spring of 2000, Dynastream signed a multi-million dollar contract with Nike, Inc., a leading sports and fitness company, to bring to market a proprietary shoe-mounted sensor, which enables wearers to determine—with great accuracy, complete ease and in real time—their distance travelled and speed. Since then, Dynastream’s patented motion analysis technology, known as SpeedMax, has become the platform on which several personal monitoring devices currently on the market are based. Dynastream has partnered with a number of large global companies to develop products customized for their sports, medical and industrial applications.

While developing SpeedMax, Dynastream uncovered a need for a low-cost, ultra-low power, RF protocol that would enable data transmission among miniature devices, and set forth to meet the need. With a wristwatch application in mind, Dynastream’s design engineers have developed ANT, a wireless personal area network (PAN) protocol and commercially available product line with the potential to become a standard among communications technologies. Dynastream believes that ANT’s advances in miniaturized low-power processors, inertial sensors and radio frequency (RF) communication devices will spawn the next generation of consumer and commercial products as well as industrial and medical equipment. As these advances are melded and applied, they will open the door to enabling everyday physical objects with the ability to compute and communicate information.

NSERC Researchers
Dynastream Innovations was founded by Kip Fyfe, Jim Rooney, Vicki Brilz and Dr. Ken Fyfe. Dr. Fyfe, a runner, track and field coach, and mechanical engineering professor at the University of Alberta, developed the inertial technology on which SpeedMax is based after someone proposed it as an ideal project for his annual design course. Dr. Fyfe’s research on biomechanical sensor development was supported by NSERC Discovery, and Research Tools and Instruments Grants.
One of the pitfalls of current methods of pesticide spraying is that much of the spray fails to stick to plant leaves. Three researchers from the University of Western Ontario have found a solution – an electrostatic spray that sticks like glue to leaves. For over 25 years, their invention has been marketed by Elstat, a company incorporated for that purpose. The bottom line? Reduced use of farm chemicals, which means cost savings for farmers and a healthier environment for all.

The co-founders of Elstat are University of Western Ontario electrical engineering professors Ion Inculet and Peter Castle, and materials engineering professor James Brown. Dr. Inculet, an expert in electrostatics and agricultural engineering, has received NSERC Discovery, Collaborative Research and Development, Research Tools and Instruments, and Strategic Project Grants since 1978. Dr. Castle is also an expert in electrostatics. His research on electrical charging and deposition of small particles has similarly been supported since 1978 by NSERC Discovery, and Research Tools and Instruments Grants. Dr. Brown’s expertise lies in the dielectric properties of materials, and he has received NSERC Discovery, and Collaborative Research and Development Grants since 1979.
E.M. Optimisation offers a scientific method of influencing industrial manufacturing processes. The company’s E.M. method improves a manufacturer’s efficiency, improves the quality of products, and reduces manufacturing costs and development time by providing models of products and processes.

The E.M. method centres on an interactive, user-friendly tool that enables the development of mathematical models of the behaviour of industrial processes, using experiments based on variables such as speed, pressure, temperature, chemical composition, and raw materials.

E.M. Optimisation has focused on pharmaceutical technologies, digital simulations of mechanical concepts and manufacturing of electronic components and aeronautical parts. The E.M. method has been used by Boeing (Rocketyne Division) for gas tungsten arc welding (GTAW) and the welding of rocket engine parts.

E.M. Optimisation was founded by Dr. Michel Galopin, President, and Pierre Lefebvre, Vice-President, to commercialize the E.M. method developed by Dr. Galopin at the École de technologie supérieure (ÉTS). Dr. Galopin, a professor of mechanical engineering at ÉTS, has been supported by NSERC Collaborative Research and Development Grants.

NSERC Researchers
E.M. Optimisation was founded by Dr. Michel Galopin, President, and Pierre Lefebvre, Vice-President, to commercialize the E.M. method developed by Dr. Galopin at the École de technologie supérieure (ÉTS). Dr. Galopin, a professor of mechanical engineering at ÉTS, has been supported by NSERC Collaborative Research and Development Grants.

NSERC Researchers
E.M. Optimisation was founded by Dr. Michel Galopin, President, and Pierre Lefebvre, Vice-President, to commercialize the E.M. method developed by Dr. Galopin at the École de technologie supérieure (ÉTS). Dr. Galopin, a professor of mechanical engineering at ÉTS, has been supported by NSERC Collaborative Research and Development Grants.
ENERKEM Technologies Inc.

Vice-President: Vincent Chornet
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E-mail: enerkem@enerkem.com

Products or Services
ENERKEM Technologies is a technology developer and vendor that operates on two fronts: a) partial oxidation systems (gasification) and gas clean-up and catalytic reforming; and b) biomass conversion and development of "green" processes and products.

Applications of ENERKEM’s technologies include the production of synthetic gas (commonly called SynGas) from biomass (forest and agricultural residues), sorted municipal waste, used plastics, waste from oil and gas refineries, and other waste products. SynGas can be used to generate steam or electricity or to produce hydrogen or liquid fuels (ethanol, methanol and hydrocarbons).

ENERKEM also operates a pilot steam treatment unit at the Université de Sherbrooke. ENERKEM and its parent company, Kemestrie, develop projects related to the development of high-performance sugars and new ways of using C5 sugars, depolymerization of lignin, hydrogels, and the isolation and purification of extract with bio-active properties. ENERKEM and Kemestrie work closely with university and institutional laboratories in these areas.

ENERKEM has a pilot and demonstration plant in Sherbrooke, Quebec, that plays a key role in optimizing the parameters of the basic engineering carried out for projects that use the company’s technologies. The group’s technologies are covered by a number of patents.

NSERC Researchers
ENERKEM Technologies is a subsidiary of Kemestrie, which was co-founded by Esteban Chornet, a professor of chemical engineering at the Université de Sherbrooke. Dr. Chornet heads a research laboratory known around the world for its contributions to the "green chemical engineering" sector in the field of alternate energy sources, more specifically the conversion of biomass to biofuels and co-products. His research group has developed technological approaches that are used today by Kemestrie, a company which was created to transfer the group’s discoveries to the industrial sector and in which the Université de Sherbrooke and the Centre québécois de valorisation de la biomasse et des biotechnologies [Quebec biomass and biotechnology development centre] are shareholders. Esteban Chornet has received Strategic Project, Discovery, and Research Tools and Instruments Grants from NSERC since 1978. He was awarded a Steacie Fellowship in 1984 and the Lionel-Boulet Prize (Quebec) in November 2004.
Engineering Seismology Group
Canada Inc.

Chief Executive Officer: Dr. Ted Urbancic
1 Hyperion Court, Kingston, Ontario K7K 7G3
Tel.: (613) 548-8287 Fax: (613) 548-8917 E-mail: sales@esg.ca

Products or Services
Engineering Seismology Group Canada (ESG) offers passive (micro) seismic recording field and laboratory (ultrasonic) instrumentation, feasibility and monitoring/processing services to different industries involved with resource exploitation/extraction and underground storage worldwide. With over 150 permanent installations operating year round, ESG is a world leader in the application of passive monitoring technology in diverse extreme geologic environments.

Building on the company’s early success in monitoring simulations in the late 1980s in Canada, followed by ESG’s analysis of microseismicity associated with compaction in the North Sea, and the widely acknowledged success of obtaining geometric and fracture growth characteristics for simulations in the Cotton Valley fields of East Texas (Cotton Valley Hydraulic Fracture Imaging Project), ESG developed the first commercially proven hydraulic fracture microseismic imaging service available to the petroleum industry. ESG has since successfully assessed over 200 simulations throughout North America. ESG’s permanent real-time microseismic systems are also deployed in reservoirs around the world, providing feedback on production-related activity such as water, steam and waste cuttings injections, and identifying reservoir characteristics by integrating passive and 4D seismic programs.

ESG is currently involved in petroleum-related monitoring projects in Europe, Canada, the Middle East and the U.S.; mining projects throughout the Americas and Australia; and nuclear waste repository and LPG (the generic name for commercial propane and commercial butane) sites in Canada, Europe and Asia. Based on its experience, ESG has developed the tools required to assess the dynamic conditions under any recording situation and is able to quickly provide monitoring solutions.

NSERC Researchers
ESG was founded by Drs. Ted Urbancic and Cezar Trifu, and Mike Neumann to commercialize developments from the laboratories of Dr. Paul Young, a professor of geological sciences at Queen’s University from 1985 to 1993, and Dr. Will Bawden, a professor in the Department of Mining Engineering. During that time, Dr. Young held a number of NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants for monitoring seismicity. He is now the director of the Lassonde Mining Institute at the University of Toronto. Dr. Bawden received NSERC Discovery, and Collaborative Research and Development Grants to develop mine design strategies that integrated seismicity, numerical modelling, and geomechanical data.
Products or Services
Engineering Services Inc. (ESI) is a leading robotics and automation technology company, specializing in the development, design and manufacture of advanced robotics and automation products and custom robotics systems. ESI is recognized as a world leader in the continued development and manufacture of new, leading-edge robotics technology. The company develops robotics-based modular automation, mobile robots, customized robotic systems and intelligent mechatronics systems. ESI’s emphasis on modularity and mobility allows it to create highly flexible and adaptable solutions that can be easily and rapidly re-configured to meet the needs of various industries.

Each ESI division boasts accomplished experts and specialists who are well prepared to take a product from research and conceptual design to full production, ensuring impeccable quality and reliability.

To date, ESI has exported its technology and products to the United States, Mexico, Sweden, Denmark, Belgium, France, Germany, Switzerland, Israel, Turkey, India, Korea, Singapore, Australia, New Zealand, etc.

NSERC Researchers
Dr. Andrew Goldenberg is a professor and the director of the Robotics and Automation Laboratory and the Mechatronics Laboratory at the University of Toronto. He pioneered the application of modular and re-configurable robotics and automation technologies to new industrial niches and founded ESI. NSERC has supported Dr. Goldenberg’s research program on robotics with Discovery, Infrastructure, Collaborative Research and Development, Strategic Project, and Research Tools and Instruments Grants. In 2004, Dr. Goldenberg received an NSERC Idea to Innovation grant to help him develop a lightweight backpackable mobile robot for surveillance, explosive detection, biochem detection and operation of light weapons.
**Ensyn Technologies Inc.**

Chief Executive Officer: Robert Graham  
2 Gurdwara Road, Suite 210, Ottawa, Ontario  K2E 1A2  
Tel.: (613) 248-2257  Fax: (613) 248-2260  
E-mail: info@ensyn.com

**ANNUAL REVENUE:** Confidential  
**NUMBER OF EMPLOYEES IN CANADA:** 30  
**YEAR INCORPORATED:** 1984  
**STOCK MARKET LISTING:** Not listed  
**INDUSTRIAL SECTOR:** Chemicals and Materials  
**WEB SITE:** www.ensyn.com

**Products or Services**  
This Ontario company has developed a commercial process to transform solid wastes, particularly forest residues, municipal wood waste and agricultural residues into valuable liquid fuels and chemicals. Ensyn Technologies and other entities of the Ensyn Group build and operate Rapid Thermal Processing (RTPTM) technology, which evolved from work conducted at the University of Western Ontario in the early 1980s. The five commercial RTPTM plants in operation convert wood residues and other biomass to a boiler fuel and food chemicals. At the beginning of this decade, Ensyn expanded the development of commercial applications of RTPTM technology to include the heavy oil upgrading sector. Alliances with companies in the petroleum sector have led to the construction and operation of pilot and demonstration plants.

**NSERC Researchers**  
Ensyn Technologies evolved from research carried out at Dr. Maurice Bergougnou’s PROREACTOR (Processes and Reactors) Lab at the University of Western Ontario. PROREACTOR’s mission to commercialize university research has led to the creation of three Canadian R&D companies. PROREACTOR pioneered worldwide commercial exploitation of “green petroleum” (biopetroleum) made from biomass.

Dr. Robert Graham, a graduate student in PROREACTOR, founded Ensyn Technologies to commercialize a circulating transported bed fast pyrolysis reactor. Dr. Bergougnou, now a Professor Emeritus in the Department of Chemical and Biochemical Engineering, has consistently received NSERC funding for his work on the development of high-performance reactors for over 25 years.
EnviroMetal’s technology, which destroys harmful organic compounds, can be used to solve a wide range of environmental problems, particularly those involving the release of chlorinated organic chemicals. The process uses granular iron to destroy organic chemicals quickly, without the need for expensive excavation and treatment of soils at contaminated sites. The technology is particularly suited for in situ clean-up of contaminated groundwater and has a multi-year performance record based on more than 150 active projects, including several at U.S. Super Fund Sites and sites in the European Union, Australia and Japan.

In June 2004, EnviroMetal merged with Adventus Remediation Technologies, based in Mississauga, Ontario. Adventus is a rapidly growing provider of remediation biotechnologies for soil sediment and groundwater.

EnviroMetal Technologies Inc.

President: John Vogan
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E-mail: jvogan@eti.ca

ANNUAL REVENUE: $2,000,000
NUMBER OF EMPLOYEES IN CANADA: 6
YEAR INCORPORATED: 1992
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.eti.ca

NSERC Researchers
EnviroMetal Technologies’ founder is Robert Gillham, an earth sciences professor at the University of Waterloo. He has received NSERC Discovery Grants since the early 1980s. Dr. Gillham’s current work, involving industrially oriented research, is directed at understanding the migration and clean-up of industrial organic compounds in different geological environments. Dr. Gillham was appointed to the University of Waterloo’s Industrial Research Chair in Groundwater Remediation in May 1997. This Chair is funded by NSERC, DuPont and EnviroMetal Technologies.
Products or Services
Under the trademark Molicel®, E-One Moli Energy is the only high volume manufacturer of rechargeable lithium-ion batteries in North America and is a recognized industry leader in the research and development of this technology. Current applications for Molicel® batteries include portable computers, video cameras, medical devices and military applications, to name a few. In addition, the company introduced a new high-power manganese technology for high-rate applications in 2004. This new technology allows unique opportunities to enter markets previously served only by nickel cadmium and nickel-metal-hydride batteries, such as cordless power tools, electric bicycles and potentially electric or hybrid-electric vehicles.

NSERC Researchers
The development of the original metal lithium-type Molicel® began in the early 1980s in Dr. Rudolph Haering’s lab at the University of British Columbia. One of Dr. Haering’s students, Dr. Jeff Dahn, now a physics professor at Dalhousie University, continued the research through the late 1980s that resulted ultimately in the lithium-ion technology-based Molicel® now in production. Both researchers were funded by NSERC for their work on lithium batteries. Another of Dr. Haering’s students, Dr. Ulrich von Sacken, has led Moli’s research team since 1990 and was initially hired as an NSERC Industrial Research Fellow in 1987 at Moli. E-One Moli Energy (Canada) Limited continues to work closely with NSERC in funding Industrial R&D Fellowships to help further the company’s advancements in research.
Focal Technologies Corporation

General Manager: Michael Glister
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ANNUAL REVENUE: $15,000,000
NUMBER OF EMPLOYEES IN CANADA: 85
YEAR INCORPORATED: 1983
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.focaltech.ns.ca

Products or Services
Focal Technologies designs and manufactures fibre optic rotary joints and slip rings that provide communication and power connections between objects that move and their stationary base. Designed to withstand the harshest environments, Focal devices can be found in winch and sonar systems, tank turrets and submarine robots. Focal’s fluid rotary unions provide subsea controls and life support to divers. Primary customers include major underwater operators, seismic companies and manufacturers of remotely operated vehicles. In addition, Focal has customers in the robotics, automation, material handling, oil and gas, and defence industries.

Focal’s second product line features sophisticated oceanographic instruments. The Optical Particle Counter (OPC) provides fast and continuous measurement of marine organisms over large regions. The OPC is a low maintenance device and the best tool available for measuring levels of zooplankton and fish eggs in seawater. Focal also manufactures video and data multiplexers that provide digital fibre optic transmissions of 4 to 12 uncompressed video channels and up to 64 bi-directional data channels on a single fibre.

Focal’s parent company, Kaydon Corporation, is listed on the New York Stock Exchange under the symbol KDN.

NSERC Researchers
Focal Technologies was set up as a joint undertaking between Nova Scotia’s Seimac and Dr. Barry Paton’s Fibre Optics Lab at Dalhousie University. Dr. Paton’s research in fibre optics received support from NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants. The oceanographic devices originally used by Focal Technologies were designed partly by NSERC-funded researchers in Dalhousie’s Oceanography Department. The company also commercialized technologies developed at the Nova Scotia Research Foundation Corp. (now InNOVAcorp).
Forbes Medi-Tech Inc.

President and Chief Executive Officer: Charles A. Butt
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Tel.: (604) 689-5899  Fax: (604) 689-7641
E-mail: info@forbesmedi.com

ANNUAL REVENUE: $16,500,000
NUMBER OF EMPLOYEES IN CANADA: 28
YEAR INCORPORATED: 1992
STOCK MARKET LISTING: TSX: FMI  Nasdaq: FMTI
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.forbesmedi.com

Products or Services
Forbes Medi-Tech adds another valuable dimension to Canada’s forestry industry. The biopharmaceutical company is dedicated to the research, development and commercialization of innovative prescription pharmaceutical and nutraceutical products derived from by-products of the forestry industry and other natural sources for the prevention and treatment of cardiovascular and related diseases.

The company’s scientific platform is based on core “phytosterol” technology. Phytosterols, also known as plant sterols, are lipid-like compounds found in the cells and membranes of all oil-producing plants, grains and trees.

Forbes has developed a phytosterol-based cholesterol-lowering food ingredient called Reducol™, which has been incorporated into various foods products and dietary supplements presently on the market in the U.S. and other international markets. Forbes has a dedicated phytosterol manufacturing plant near Houston, Texas, with an annual capacity of 1,500 metric tonnes. In addition, the company is conducting a Phase II clinical trial of its cardiovascular pharmaceutical compound, FM-VP4, a cholesterol absorption inhibitor. The company is continuing to grow its business through a commitment to therapeutic innovation, ongoing research and development, and licensing of new technologies.

NSERC Researchers
Dr. James Kutney was a chemistry professor at the University of British Columbia. His research produced valuable technology related to the extraction of plant sterols from by-products of the forest industry for commercial applications. Forbes Medi-Tech was formed to further develop Dr. Kutney’s plant sterol extraction and fermentation technology. NSERC has supported Dr. Kutney’s research program with Strategic Project, Infrastructure and Discovery Grants.
FreshXtend’s technologies enable shelf life extension through natural processes with no artificial additives, preservatives, chemicals, genetic alterations or irradiation. The company’s two main products are FreshSpan™, a modified atmosphere corrugated packaging system, and modified atmosphere packaging for Maptek Fresh™.

FreshSpan™ is a packaging system that consists of a breathable plastic membrane in the liner of the walls of a corrugated paperboard FreshSpan™ box, which is designed specifically so that it can be hermetically sealed after the introduction of produce items. During the storage of produce in the FreshSpan™ box, carbon dioxide increases and oxygen decreases in the headspace until an equilibrium modified atmosphere is established and a high humidity is maintained. Low levels of oxygen and high levels of carbon dioxide can inhibit the expression of hydrolytic enzymes associated with fruit ripening and vegetable decay, thereby preventing the ripening and softening of the tissue over an extended period.

Maptek Fresh™ is used to extend the life of fresh-cut produce. Maptek Fresh™ is a post-harvest biotechnology consisting of a series of interrelated product-specific procedures which, when appropriately selected for each type of product, stabilize the produce and place it in a state of hibernation. This condition allows the produce to retain its quality, ripe-harvested and fresh characteristics over an extended period. The process essentially places the produce in a state of hibernation, thereby extending life.

NSERC Researchers

Dr. William Powrie was the head of the Food Science Department at the University of British Columbia in 1969, when the department was formed, until 1989. His research into food chemistry led to a modified atmosphere packaging system; the technology was the foundation of SunBlush Technologies Corporation, now known as FreshXtend Technologies. Dr. Powrie, now a Professor Emeritus in the Department of Agricultural Sciences at the University of British Columbia, received NSERC Strategic Project, Discovery, and Research Tools and Instruments Grants.
GBBC Medica Inc.

President: Ghassan Bkaily
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ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 9
YEAR INCORPORATED: 2001
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals and Biotechnology
WEB SITE: Not listed

Products or Services
GBBC Medica conducts research on new treatments for septic shock, pain, diabetes and essential hypertension.

NSERC Researchers
GBBC Medica was founded by Pedro d’Orléans-Juste and Ghassan Bkaily. Dr. Bkaily, the president of GBBC, is a professor in the Department of Anatomy and Cellular Biology at the Université de Sherbrooke. His research on calcium and cardiovascular cells has been supported by NSERC Discovery Grants.
GeneMax Pharmaceuticals Inc.

President and Chief Executive Officer: Konstantine Sarafis
1681 Chestnut Street, Suite 400, Vancouver, British Columbia   V6J 4M6
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E-mail: handford@genemax.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: OTC-BB: GMXX
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.genemax.com

Products or Services
GeneMax Pharmaceuticals was formed around the vision of bringing leading-edge immunotherapies to market to cure and alleviate suffering for people with cancer, infectious diseases, auto-immune disorders and other immune-related diseases.

The company’s lead product is a therapeutic cancer vaccine, which provides a general method for improving the recognition and elimination of cancer cells by the person’s own immune system. The vaccine provides therapeutics to treat a wide variety of solid tumours deficient in the TAP (Transporters Associated with Antigen Processing) protein. These include lung cancer, melanoma, prostate cancer, breast cancer and cervical cancer.

The TAP protein is delivered via a vaccine to the cancer cells to recreate the TAP pathway. GeneMax’ therapeutic cancer vaccine has been proven successful in animal trials where mice with lung cancer experienced up to 70 per cent survival rates following treatment with the vaccine.

NSERC Researchers
Dr. Wilfred Jefferies, GeneMax’s chairman and chief scientific officer, is a professor of medical genetics, microbiology and immunology, and a member of the Biomedical Research Centre and the Biotechnology Laboratory at the University of British Columbia. The early stages of Dr. Jefferies’ work on an immune system-based cancer vaccine were funded by NSERC. Dr. Jefferies has received NSERC Strategic Project, Research Tools and Instruments, and Discovery Grants.
Products or Services
GeoTango is a leading geospatial software company. The company is revolutionizing the way geospatial information is extracted, modeled, visualized and communicated.

GeoTango owns significant intellectual properties and patenting technologies in network-based 3D/2D mapping and visualization, and in image-based information extraction and modeling. GeoTango currently offers three primary COTS standalone and OEM products.

SilverEye™ is the only software in the world that allows users to create 3D models and conduct 3D measurements and exploitation using single satellite images and aerial photos. This patent-pending technology allows users of all skill levels to exploit the 3D values of the single images readily available or existing in your archive.

Smart Digitizer is an OEM product that employs GeoTango’s proprietary algorithms to automate feature extraction from remotely sensed imagery. This is a revolutionary solution to the labour intensive heads-up digitizing.

GeoServNet (GSN) is a network-centric 3D/2D spatial visualization and streaming system that allows users to perform 3D/2D visualization and interactive exploration of multiple data sources over a distributed network. This groundbreaking system delivers a full 3D world with multiple resolution images and maps through its open and services-based GSN framework.

GeoTango’s customers are solving critical geospatial problems in a broad range of industries. Current clients include defence, intelligence, homeland security, emergency response, telecommunications, municipalities, health, media, utility and energy, and UN treaty monitoring organizations.

NSERC Researchers
GeoTango’s founder, Dr. Vincent Tao, holds the Canada Research Chair in Geomatics. He is also the director of the Geospatial Information and Communication Technology (GeoCT) Lab and associate professor in the Department of Earth and Space Science and Engineering and the Department of Computer Science at York University.

A world-renowned expert in GIS and digital mapping, NSERC has supported Dr. Tao’s research program with Discovery Grants. He also won a 2002 NSERC University-Industry Synergy Award with Optech Inc.
GIRO Inc.

President: Paul Hamelin
75 Port-Royal Street East, Suite 500, Montréal, Quebec H3L 3T1
Tel.: (514) 383-0404 Fax: (514) 383-4971
E-mail: info@giro.ca

ANNUAL REVENUE: $27,000,000
NUMBER OF EMPLOYEES IN CANADA: 160
YEAR INCORPORATED: 1979
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Transportation
WEB SITE: www.giro.ca

**Products or Services**

Software created by GIRO is used in more than 24 countries on five continents.

Public transportation companies in large urban centres such as Sydney, Los Angeles, Singapore, Montréal and Brussels use HASTUS software to design mass transit schedules (for vehicles and staff). The software has enabled public transit companies to substantially reduce operating costs and vehicle requirements (by up to 5 per cent). HASTUS modules are also planned for customer information and day-to-day operations management.

The software package GIRO/ACCES provides reservation and tour organization functions for mobility-impaired travelers. It is currently used in Montréal, and an earlier version is being used in Toronto.

GIRO also provides software for designing mail pick-up and delivery routes. One of its products, GeoRoute, is used by Canada Post Corporation and the postal services of Belgium, Germany, the United Kingdom, Norway, Portugal and Luxembourg.

Products are the result of research carried out at the Université de Montréal, the École des Hautes Études Commerciales and the Université de Québec à Montréal.

**NSERC Researchers**

GIRO Inc. was founded by Jean-Yves Blais and Jean-Marc Rousseau. Dr. Rousseau had until then been a professor in the Department of Informatics and Operational Research and director of the transportation research centre at the Université de Montréal. His research focused on problems related to mass transit. He also collaborated with other researchers at the Université de Montréal on systems currently being marketed for mail delivery. He was vice-president of research and development at GIRO until 2000. Since 2002, he has been president and chief executive officer of the Centre interuniversitaire de recherche en analyse des organisations [interuniversity centre for research in organizational analysis] (CIRANO) and has continued to work with GIRO. Jean-Marc Rousseau’s university research was funded by NSERC Discovery, Strategic Project and Infrastructure Grants.

The company is also a licensed user of the Gencol technology developed by François Soumis of the Department of Mathematics and Industrial Engineering at Montréal’s École Polytechnique and Jacques Desrosiers, who teaches quantitative management methods at the École des Hautes Études Commerciales. NSERC has supported their research through Discovery, Strategic Project and Infrastructure Grants.
Guigné International Ltd.

Chief Executive Officer: Dr. Jacques Yves Guigné
685 St. Thomas Line, Paradise, Newfoundland and Labrador A1L 3V2
Tel.: (709) 895-3819    Fax: (709) 895-3999
E-mail: gil@guigne.com

ANNUAL REVENUE: $5,000,000
NUMBER OF EMPLOYEES IN CANADA: 25+
YEAR INCORPORATED: 1989
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Engineering and Scientific Services
WEB SITE: www.guigne.com

Products or Services
Guigné International is a world-leading designer and manufacturer of original equipment and component products for the space, defence, aquaculture and petroleum sectors. The company offers its clients cost-effective solutions to acoustical engineering problems. It has developed a method for acoustic beam shaping to create very narrow beams of sound, similar to a laser’s use of light. This enabling technology provides a definition and precision unparalleled in conventional acoustic systems.

Following more than 20 years of research and development of its core technology – DRUMS® (Dynamically Responding Ultrasonic Matrix System) – Guigné International is commercializing a broad range of products and services. Each is specifically engineered to meet the requirements of the marketplace. Ongoing innovation and product development offers considerable potential in the biomedical, food technology and general marine industries.

NSERC Researchers
Guigné International was established in 1989 by Dr. Jacques Yves Guigné and presently employs over 20 top engineers and physicists, plus electronics and administrative support staff.

Dr. Guigné is an associate professor in the Faculty of Engineering and Applied Science at Memorial University of Newfoundland. Among his research interests are the acoustical investigation of the subseabed, the health of the benthic habitat, and assessing structural integrity using acoustics. Dr. Guigné has received NSERC Discovery, Collaborative Research and Development, Strategic Project, and Research Tools and Instruments Grants.
Edmonton’s Harding Instrument Company has a long history as a university start-up company. It was founded in 1969 by four electrical engineering professors from the University of Alberta. The company designs and manufactures microelectronics for a variety of applications. Its product line includes advanced flow measurement devices for the oil patch market and the MicroComm DXI and DXL digital voice communication systems for the correctional and security market.

MicroComm DXI systems have already been installed in over 120 facilities throughout North America. Many of those facilities rank as the largest and most secure in the United States. The MicroComm DXL was introduced in 2004 and expands the product line to include smaller, widely distributed or retrofit applications. With MicroComm products available to fulfill virtually any project requirement, opportunities to open up overseas markets are being investigated. MicroComm systems benefit Harding’s customers because of their ability to integrate with other communications systems, their comprehensive features package and their flexible configuration.

Harding Instrument’s research and development team remains actively involved in developing other sophisticated microprocessor-based electronic products to expand its current markets and to present viable technological solutions to new industrial sectors. While the company continues to promote its OEM engineering and manufacturing operations, it has a strong desire to develop more products that it can take directly to market.

NSERC Researchers

Dr. Patrick Harding is one of the founders of the Harding Instrument Company. He was a professor of electrical engineering at the University of Alberta for 19 years, where he joined with several academic friends to form Harding Instruments. Dr. Harding participated in the establishment of the Alberta Microelectronics Centre (now Micralyne). His university research was supported by NSERC Discovery Grants.
HERA Hydrogen Storage Systems Inc.

President and Chief Executive Officer: Clemens van Zeyl
577 Le Breton Street, Longueuil, Quebec    J4G 1R9
Tel.: (450) 651-1200, ext. 208    Fax: (450) 651-1209
E-mail: mh@herahydrogen.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 15
YEAR INCORPORATED: 2001
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.herahydrogen.com

Products or Services
HERA Hydrogen Storage Systems develops hydride materials, hydrogen/hydride nano-catalysts and hydride-based products for automotive, transportation and hydrogen distribution markets. Hydrides are materials that can absorb and release hydrogen, and have distinctive heat and pressure characteristics. These attributes make hydrides well suited for several applications, including solid-state hydrogen storage, hydrogen compression, heating and cooling, and nickel-hydrogen batteries. These applications are the focus of HERA's development and commercialization program.

Along with HERA's own important patent portfolio, HERA is the exclusive licensee of several significant inventions in the field of hydride materials from Hydro-Québec's Research Institute and McGill University.

HERA is a venture-owned company based in Longueuil, Quebec (near Montréal), with a wholly owned subsidiary, HERA USA Inc. in Ringwood, New Jersey, close to New York City. HERA's shareholders include BOC, Hydro-Québec CapiTech and Shell Hydrogen Projects.

NSERC Researchers
Dr. John Ström-Olsen is a professor emeritus of physics at McGill University. He started work on hydrogen storage in 1983 with the help of NSERC Strategic Project Grants. His research in collaboration with Dr. Zaluska and Dr. Zaluski has led to several inventions. In conjunction with HERA's other intellectual property, and in particular HERA's breakthrough nano-catalyst invented by Dr. Zaluska and Dr. Zaluski, the research places HERA in a unique position to provide solid-state, hydrogen storage systems for mobile power applications, including hydrogen-powered automobiles and portable power applications. Dr. Ström-Olsen's, Dr. Zaluska's and Dr. Zaluski's research in advanced materials has been supported by the NSERC Discovery, Strategic Project, Research Tools and Instruments, and Collaborative Research and Development Grants for the last 25 years.
Hycal Energy Research Laboratories Ltd.

Ownership Group: Weatherford Canada Partnership
1338A 36th Avenue NE, Calgary, Alberta T2E 6T6
Tel.: (403) 250-5800 Fax: (403) 291-0481
E-mail: general@hycal.com

ANNUAL REVENUE: $7,000,000
NUMBER OF EMPLOYEES IN CANADA: 60
YEAR INCORPORATED: 1976
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Mining, Oil, Gas and Utilities
WEB SITE: www.hycal.com

Products or Services
Hycal Energy Research Laboratories is one of the first Canadian petroleum research firms. The company has developed equipment to perform research that previously had to be done offshore. Working in the area of reservoir engineering, production engineering and enhanced oil recovery, Hycal provides the oil industry with applied research and consulting services.

For over 25 years Hycal has developed expertise in the areas of special core analysis, formation damage and phase behaviour studies. The company’s specialized expertise has allowed it to work worldwide designing miscible floods, steam floods, gas recycling projects, mitigation of formation damage problems, water floods, fracture and completion strategies, and many other enhanced recovery and reservoir optimization schemes.

Hycal has developed steam floods in California, South America and Turkey, gas recycling projects in Prudhoe Bay, and has done extensive enhanced oil recovery work in the U.S., South America, the South Pacific, Asia, Africa and the Alberta Basin. The company has also helped mitigate formation damage problems related to horizontal drilling, water flooding and fracture and completion strategies in Argentina, Australia, the North Sea, the U.S., North Africa and Canada.

NSERC Researchers
Hycal Energy Research Laboratories was initially formed by Drs. Douglas W. Bennion and Gordon Moore to perform research for Petro Canada. Dr. Bennion taught for 21 years in the Department of Chemical and Petroleum Engineering at the University of Calgary. NSERC has supported Dr. Bennion’s basic research through Discovery, Strategic Project, and Research Tools and Instruments Grants.

RESEARCH MEANS BUSINESS
Products or Services

Hydromantis is a unique employee-owned Canadian environmental engineering consulting company. It specializes in the application of environmental planning, innovative plant optimization programs, application of process and design engineering skills, and solutions to wastewater treatment, collection systems and water resources management.

Hydromantis specializes in the application of proven methods for the optimization and design of wastewater treatment systems. The company provides clients with services that address their needs in areas of environmental planning, treatability assessments, process, conceptual, pre-design and detailed design engineering, operations and operator training, software design and support, and instrumentation and control.

Hydromantis staff is experienced in all aspects of wastewater treatment, including desktop analyses, piloting, field-testing at full scale, and pre-design engineering of water and wastewater treatment facilities. The company has expanded its capabilities to include multidiscipline detailed design and services during construction. Hydromantis has the experience and ability to carry out projects from the initial conceptual stage all the way through to commissioning, operation and training of facility staff.

The company offers a unique blend of consulting engineering services and innovative software products designed to optimize water and wastewater treatment plant design, operation and operator training. GPS-X (General Purpose Simulator) is Hydromantis’ key software product together with CapdetWorks and ParaMetra. GPS-X is recognized as the most comprehensive and powerful treatment plant simulator in the world. It incorporates many models and utilities from around the world for use by plant owners, operators, consultants and researchers.

NSERC Researchers

Hydromantis was established in 1985 by Dr. Gilles Patry, then a civil engineering professor at McMaster University. Dr. Patry is now professor of civil engineering and president and vice-chancellor of the University of Ottawa. His research projects are funded by NSERC Discovery Grants.

In addition, Dr. Spencer Snowling, an R&D manager at Hydromantis, received an NSERC Industrial Research Fellowship to research new modelling uncertainty methods for industrial wastewater models.
iAnywhere Solutions Inc.

President: Terry Stepien
445 Wes Graham Way, Waterloo, Ontario N2L 6R2
Tel.: (519) 886-3700 Fax: (519) 747-4971
E-mail: contact.us@ianywhere.com

Products or Services
iAnywhere was founded as WATCOM International Corporation, a start-up company from the University of Waterloo. In 1994, WATCOM merged with Powersoft Corporation, which subsequently combined in 1995 with California-based Sybase, Inc., one of the largest global independent software companies. In 2000, iAnywhere Solutions became a subsidiary of Sybase.

iAnywhere enables success at the frontlines of business, and holds worldwide market leadership positions in mobile and embedded databases, mobile management and security, and mobile middleware. iAnywhere’s unique “Always Available” computing model provides on-line and off-line access to the information and applications users need, when and where they need it most. Millions of subscribers, 15,000 customers and 1,000 partners rely on the company’s award-winning technologies, including SQL Anywhere®, Afaria®, and the AvantGo® mobile Internet service.

NSERC Researchers
Members of the University of Waterloo’s Computer Systems Group, headed by Dr. Wes Graham, established WATCOM, the predecessor of Sybase, which founded iAnywhere Solutions. The group’s expertise enabled the WATCOM team to produce innovative software for the education market. Many members of the Computer Systems Group, including Dr. Graham and Dr. Donald Cowan, now a Professor Emeritus in the Department of Computer Science, received NSERC support through Discovery Grants.

Terry Stepien, iAnywhere’s president, was also a member of Waterloo’s Computer Systems Group, where he held an adjunct faculty appointment in the Department of Computer Science.
IGNIS Innovation Inc.

Chairman: Paul Arsenault
55 Culpepper Drive, Waterloo, Ontario N2L 5K8
Tel.: (514) 396-0212, ext. 202 Fax: (514) 396-3511
E-mail: jwzorek@versentech.com

**Products or Services**
IGNIS Innovation is a privately held technology company focused on technology solutions for flat panel displays, used in televisions, PDAs and cell phones. The company has developed unique pixel circuits for display technology that are highly stable and have long lifetimes.

The IGNIS patent-pending pixel circuit addresses the specific performance demands of active matrix organic light emitting diodes (AMOLED) display technology, representing a breakthrough that could potentially accelerate AMOLED commercial product entry within all markets from cell phone to PDA to large area television.

The IGNIS design is a self-compensating, current or voltage programmed, top or bottom emitting design with a proven lifetime of over 6,000 real time hours of continuous operation. Extrapolation through acceleration demonstrates over 20,000 hours of pixel lifetime and beyond – a key milestone for more demanding flat panel television and monitor applications. Pixel operation has been shown over a wide range of temperatures from room to 75 degrees Celsius, a first for amorphous silicon based pixel circuits. All pixel testing has been performed under actual video rated driving conditions.

**NSERC Researchers**
The IGNIS silicon thin-film transistor circuits were initially developed by Dr. Arokia Nathan, the company’s founder and chief technology officer, and a professor of electrical and computer engineering at the University of Waterloo. Dr. Nathan holds the Canada Research Chair in Nanoscale Elastic Circuits, and prior to that the DALSA/NSERC Industrial Research Chair in sensor technology for biomedical X-ray imaging. Dr. Nathan has received NSERC Discovery, Collaborative Research and Development, Research Tools and Instruments and Strategic Project Grants. In 2001, he was awarded an NSERC Steacie Fellowship for his cutting-edge research on electronics, including sensors and displays, on flexible plastic. His present research interests lie in large area optical and X-ray imaging, and displays using nano-crystalline silicon and organic technologies.
iGO Technologies Inc.

President and Chief Executive Officer: Mark Young
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E-mail: info@igotechnologies.com

**Products or Services**

iGO Technologies specializes in computer-assisted surgery. iGO’s products are designed for use by surgeons as diagnostic tools for pre-operative planning, intra-operative navigation and imaging, and post-operative assessment.

iGO’s Virtual Surgery System is an imaging and guidance system that allows surgeons to work with computerized 3D models of a patient’s anatomy in order to assess, plan and perform surgical procedures. The system can be used in a wide variety of orthopedic surgical procedures, such as joint replacements, bone re-alignments, and the removal of tumours. iGO’s 3D imaging system provides surgeons with a more realistic picture of the patient’s anatomy, guiding them in real time with continuous visual and numeric feedback. Operations on fragile joints damaged by arthritis or fracture become less invasive, significantly reducing a patient’s exposure to radiation. iGO’s surgical team has performed over 100 computer-assisted surgeries at the Kingston General Hospital.

**NSERC Researchers**

Dr. Randy Ellis is one of the founders of iGO Technologies and its vice-president of research. A professor in the School of Computing at Queen’s University, he is also cross-appointed to the Department of Mechanical Engineering and the Department of Surgery. Dr. Ellis is recognized internationally as a leading researcher in computer-assisted surgery and heads the research program Operating Room 2010, North America’s first multi-purpose computer-integrated operating room. Dr. Ellis’ research in computer-enhanced surgery has been supported by NSERC Strategic Project, Research Tools and Instruments, and Discovery Grants.
Magnetic technology is at the heart of much electrical and electronic equipment. While the technology has been incredibly successful, it has also created some unique design problems. Often, the only way to test whether a device such as a VCR or computer hard drive is viable is to build a prototype, a time-consuming and expensive process. Montreal’s Infolytica has a time- and money-saving solution. It has developed a software package that analyzes potential designs without having to construct a prototype. The software is based on research which originated at McGill University and is currently the most advanced design package of its kind in the world.

In addition to magnetics analysis, Infolytica offers coupled analysis to thermal problems as well as links to power electronics simulations and an optimization capability. The company also offers consulting services and custom software design in the computer, communications, manufacturing, aerospace and automotive industries.

Infolytica was founded by Dr. David A. Lowther, an electrical engineering professor at McGill University, the late Dr. Peter Silvester, also of McGill, and Dr. Ernest Freeman from Imperial College, London, U.K. Dr. Lowther, Infolytica’s president, has research interests in electromagnetic field analysis, computer software, computer-aided design and the automated design of electromagnetic devices. Dr. Jonathan Webb, vice-president of Infolytica, is also an electrical engineering professor at McGill, and his area of research includes numerical analysis systems and electromagnetic analysis of high-frequency systems. Drs. Lowther and Webb’s research continues to attract NSERC Discovery, and Research Tools and Instruments Grants.
Transportation planning studies are more productive and efficient in many of the countries around the world, thanks to INRO Consultants. The company produces the EMME/2 software that is used to model urban, regional and national transportation of people. INRO’s clients include more than 700 organizations in 65 countries that use the company’s software to model the results of changes to transport infrastructure and land use, such as the construction of new roads, the introduction of new transit services and the development of new residential areas. Based on research undertaken at the Université de Montréal’s Centre for Research on Transportation, the software is designed to be applicable in numerous fields. Its powerful macro language allows the implementation of complex transport models. Recently INRO has released a new software, Dynameq, that models the temporal evolution of road traffic.

INRO Consultants Inc.

Chief Executive Officer: Dr. Michael Florian
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Tel.: (514) 369-2023  Fax: (514) 369-2026
E-mail: sales@inro.ca

ANNUAL REVENUE: $3,700,000
NUMBER OF EMPLOYEES IN CANADA: 27
YEAR INCORPORATED: 1976
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.inro.ca

Products or Services

INRO Researchers

INRO Consultants was founded by Dr. Michael Florian, a Professor Emeritus at the Université de Montréal’s Department of Computer Science and Operational Research and a member of the Centre for Research on Transportation at the same university. Dr. Florian’s work is supported by NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants. INRO Consultants benefited from an NSERC Industrial Research Fellowship.
Interactive Visualization Systems
(IVS 3D)

Chief Executive Officer: Mark Paton
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Tel.: (506) 454-4487 Fax: (506) 453-4510
E-mail: info@ivs3d.com

Products or Services
Interactive Visualization Systems (IVS 3D) provides interactive 3D visualization and analysis software for marine information. The company’s flagship software, Fledermaus, is an industry-leading software for 3D visualization of marine information and associated attributes, specializing in extremely large data sets. The Fledermaus software suite enables commercial, academic and military clients mapping the oceans to interact with massive geographical datasets of numerous data types. The software has been used extensively across the ocean industry in geological surveys, hydrographic surveys, mine clearance and beach landing surveys; and a variety of geo-hazard surveys in support of offshore engineering projects worldwide.

NSERC Researchers
Interactive Visualization Systems’ primary product is the Fledermaus software suite that originated from research by Drs. Larry Mayer and Colin Ware at the Ocean Mapping Group (OMG) at the University of New Brunswick. Dr. Mayer is now the Director of the the Center for Coastal and Ocean Mapping (CCOM) at the University of New Hampshire. A world leader in ocean mapping, Dr. Mayer has received NSERC Discovery, Infrastructure, and Research Tools and Instruments Grants.
Dr. Ware is the Director of the Data Visualization Research Laboratory at CCOM. His research program has been supported by NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants.
Interface Biologics Inc.

President and Chief Scientific Officer: Dr. Paul Santerre
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ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 6
YEAR INCORPORATED: 2001
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Medical Devices and Instrumentation
WEB SITE: www.interfacebiologics.com

Products or Services
Interface Biologics is a therapeutic biomaterials company focused on producing the next generation of smart, implantable, bioresorbable medical devices for use in cardiovascular, urogenital and musculoskeletal disease areas. The company’s comprehensive understanding of material structure and host response allows its materials to respond to inflammation, deliver a therapeutic payload, and be completely resorbed by the body.

The company’s goal is to continuously design innovative biomaterials that will bring about the delivery of successful health care products to world markets. This is being achieved through the application of novel polymer technologies that will increase blood and tissue compatibility, establish the timely release of drugs in vivo, and stimulate tissue regeneration for a broad-spectrum of biomaterials and devices including catheters, wound dressings and vascular stents.

NSERC Researchers
Interface Biologics was founded by Dr. Paul Santerre, Jeanette Ho and Dr. Mark Mittelman with Materials and Manufacturing Ontario, and the University of Toronto and its Innovations Foundation. Dr. Santerre is a professor and associate dean of research in the Faculty of Dentistry and professor in the Institute for Biomaterials and Biomedical Engineering at the University of Toronto, with a cross-appointment to the Department of Chemical Engineering and Applied Chemistry. NSERC funds his research on biomaterials with Discovery, Collaborative Research and Development, and Collaborative Health Research Projects Grants.
International Road Dynamics Inc.
President and Chief Executive Officer: Terry Bergan
702 43rd Street E., Saskatoon, Saskatchewan S7K 3T9
Tel.: (306) 653-6600   Fax: (306) 242-5599
E-mail: info@irdinc.com

ANNUAL REVENUE: $28,288,000
NUMBER OF EMPLOYEES IN CANADA: 150
YEAR INCORPORATED: 1980
STOCK MARKET LISTING: TSX: IRD
INDUSTRIAL SECTOR: Transportation
WEB SITE: www.irdinc.com

Products or Services
International Road Dynamics (IRD) is a highway systems technology company producing a variety of integrated solutions to better manage the operations and improve the safety of highway facilities. These intelligent transportation systems are used worldwide by highway operators and highway users.
IRD designs and manufactures transportation systems and equipment including toll road equipment, weigh-in-motion machines, traffic safety and advisory systems, driver and fleet management systems, and automated truck weigh stations. The company also has the ability to deliver and install its transportation systems for its customers.
IRD’s main facility is in Saskatoon, with branch offices located in Ontario, the United States and India.

NSERC Researchers
Dr. Arthur Bergan is the founder and chairman of the board of IRD. He formed IRD initially to develop research-related technology (weigh-in-motion scales capable of weighing trucks travelling at up to 100 kilometres per hour), a technology which was funded in part by NRC/NSERC. Dr. Bergan, an internationally recognized authority on transportation engineering, is a Professor Emeritus at the University of Saskatchewan. He was inducted into the Saskatchewan Transportation Hall of Fame in 2001 and received an Award of Achievement from the National Transportation Industry.
ITRES Research manufactures, supports and operates a family of airborne optical systems for environment and resource monitoring, including the CASI (Compact Airborne Spectographic Imager), a commercial, all-digital, programmable imaging spectrograph. These instruments provide information products for water quality, forestry, agriculture and detection of military land mines. Some examples of agricultural and forest inventory products include infestations, species, stem counts, crown closure estimates, patch mapping and stream management. ITRES instruments are available for sale or lease.

NSERC Researchers
Dr. Clifford Anger, a Professor Emeritus of physics and astronomy at the University of Calgary, founded ITRES Research and serves as the company’s president and chief executive officer. The company is an earthbound spin-off of Dr. Anger’s space-based research. He has designed scientific instruments for the ISIS 2 satellite and the Swedish Viking spacecraft. He was also a member of NASA’s Galileo mission to Jupiter imaging team. The CASI is a system based on technology developed by ITRES personnel for Canadian and U.S. space projects. Dr. Anger’s research has been supported by NSERC through Discovery, Research Tools and Instruments, and Collaborative Research and Development Grants, as well as Industrial Research Fellowships.
JGKB Photonics Inc.

Products or Services
JGKB Photonics designs and manufactures electro-optic components that enable next-generation fibre-optic telecommunication systems. The company’s proprietary technology solves key problems involved in the transmission of large amounts of digital information over long distances via optical fibres. JGKB’s modulators are aimed at next-generation systems, which can operate at 40 billion bits per second and beyond.
Built in compound semiconductors, JGKB’s ultra-high-speed external modulators offer low drive voltage, wide bandwidth, and low chirp operation, a winning combination for long-distance fibre-optic communication systems. In addition, JGKB’s modulators are broadband devices: a single modulator covers an entire fibre-optic communication band, i.e., the entire C or L band. JGKB’s modulators combine, and improve upon, the desirable features of electro-absorption modulators and lithium niobate-based Mach-Zehnder modulators, providing system designers with external electro-optic modulators that exhibit unprecedented performance.

NSERC Researchers
The company name JGKB Photonics uses the last initials of the four founders – Dr. Nicolas Jaeger, Alan Guest, Hiroshi Kato and Dr. Jeffrey Bull. Dr. Bull serves as research scientist at JGKB and has been supported by NSERC postgraduate scholarships. Dr. Jaeger is a professor of electrical and computer engineering at the University of British Columbia, where he invented the core technology used in JGKB’s optical modulators. Dr. Jaeger’s research has been supported by NSERC Discovery, Collaborative Research and Development, Industrially Oriented Research, and Research Tools and Instruments Grants.
This is the second company generated from one of Dr. Jaeger’s technologies. In July 1997, Carmanah Engineering Ltd., now NxtPhase Corporation, was the first company to spin off from work done in his lab. NxtPhase is a thriving local company in the field of optical instruments for measuring voltage and current in power utility applications.
Products or Services
The best way to get companies to “go green” is to help them make going green profitable. That is exactly what Kemestrie Inc. does. Based on research carried out at the Université de Sherbrooke, the company develops and markets biorefinery technologies used to transform organic waste materials (including forest, urban, industrial and agricultural residues) into fine chemicals and other valuable products. Pilot plants and two commercial plants already use technologies developed by Kemestrie, the operational arm of which is its satellite company, Enerkem Technologies Inc.

NSERC Researchers
Kemestrie was co-founded by Esteban Chornet, a professor of chemical engineering at the Université de Sherbrooke. Dr. Chornet heads a research laboratory known the world over for its contributions to the “green chemical engineering” sector in the field of alternate energy sources, more specifically the conversion of biomass to biofuels and co-products. His research group has developed technological approaches that are used today by Kemestrie, a company which was created to transfer the group’s discoveries to the industrial sector and in which the Université de Sherbrooke and the Centre québécois de valorisation de la biomasse et des biotechnologies [Quebec biomass and biotechnologies development centre] are shareholders. Esteban Chornet has received Strategic Project, Discovery, and Research Tools and Instruments Grants from NSERC since 1978. He was awarded a Steacie Fellowship in 1984 and the Lionel-Boulet Prize (Quebec) in November 2004.
LTRIM Technologies specializes in the production of intellectual property aimed at the analog and mixed high-performance microelectronics market. The company was created to market and patent unique laser tuning technology. LTRIM also designs integrated circuits for analog and mixed-signal applications using the CMOS (Complementary Metal Oxide Semiconductor) manufacturing process.

LTRIM’s laser calibration technology consists of integrating resistance inside the bottom layers of silicon into circuit design during the manufacturing process. The circuits are then calibrated by focusing a laser beam on a micrometer surface. This approach has unique advantages for designers of high-performance analog circuits, such as accurate tuning, smaller size, lower energy consumption and higher operating speeds. It also allows precision circuits to be produced at a lower cost than with the standard calibration technologies used in the industry.

To complement its laser fine tuning technology, LTRIM has surrounded itself with a team of top-flight analog and mixed circuit designers who work continually to expand the range of high-performance CMOS circuits that can be marketed in an SoC (System-on-a-Chip) context and as separate products. LTRIM also provides custom design services industry-wide.

Always abreast of market needs, LTRIM has geared the development of its products to energy conservation and management applications related to telecommunications and the consumer market in order to address the phenomenon of convergence.

LTRIM Technologies Inc.
President and Chief Executive Officer: Guy Lemieux
440 Armand-Frappier Boulevard, Suite 140, Laval, Quebec H7V 4B4
Tel.: (450) 681-3171  Fax: (450) 681-0370
E-mail: info@ltrim.com

Products or Services
LTRIM Technologies specializes in the production of intellectual property aimed at the analog and mixed high-performance microelectronics market. The company was created to market and patent unique laser tuning technology. LTRIM also designs integrated circuits for analog and mixed-signal applications using the CMOS (Complementary Metal Oxide Semiconductor) manufacturing process.

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Always abreast of market needs, LTRIM has geared the development of its products to energy conservation and management applications related to telecommunications and the consumer market in order to address the phenomenon of convergence.

NSERC Researchers
LTRIM Technologies emerged from a research project carried out at Montréal’s École Polytechnique by Yves Gagnon, head of technology at LTRIM, Yvon Savaria and Michel Meunier. NSERC grants helped the researchers complete their project, particularly the early work done in École Polytechnique laboratories. Dr. Savaria, a professor of electrical engineering at the École Polytechnique, holds the Canada Research Chair in Advanced Microelectronic Systems Architecture and Development and is also vice-chair of the board of directors of the Canadian Microelectronics Corporation. NSERC has supported his work on microelectronic circuits through Discovery and Strategic Project Grants. Dr. Meunier holds the Canada Research Chair in Materials Micro/Nano-engineering using Lasers in École Polytechnique’s Physical Engineering Department. His research in microelectronics has been supported by NSERC Discovery and Strategic Project Grants.
MacDonald, Dettwiler and Associates Ltd. (MDA)

President and Chief Executive Officer: Daniel E. Friedmann
13800 Commerce Parkway, Richmond, British Columbia  V6V 2J3
Tel.: (604) 278-3411  Fax: (604) 273-9830
E-mail: info@mda.ca

ANNUAL REVENUE: $627,309,000
NUMBER OF EMPLOYEES IN CANADA: 1,400+
YEAR INCORPORATED: 1969
STOCK MARKET LISTING: TSX: MDA
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.mda.ca

Products or Services
MacDonald Dettwiler and Associates (MDA) provides advanced earth and space-based information solutions that capture and process vast amounts of data, produce essential information and improve operational performance of business and government organizations worldwide. MDA’s information solutions range from complex operational systems, to tailored information services, to electronic information products.

The company offers on-line property information solutions, such as automated valuation models, automated underwriting solutions and electronic filing of legal documents. In addition, MDA profiles solutions for Synthetic Aperture Radar (SAR) and small satellite missions, optical and SAR satellite ground segments; defence intelligence solutions such as flight path safety systems and naval combat operator trainers; and, Robotic and Light Detection And Ranging (LiDAR) solutions for land and space exploration and on-orbit servicing.

NSERC Researchers
MDA was co-founded by Vern Dettwiler and John MacDonald. Dr. Dettwiler is an expert in computer systems engineering and digital communications. He was the head of the New Projects Unit at the University of British Columbia’s Computing Centre from 1966 to 1971. Dr. MacDonald, an expert in remote sensing and image processing, was an electrical engineering professor at the University of British Columbia and one of the founding members of the B.C. Science Council. Dr. Dettwiler received NSERC/NRC grants.

MDA has employed several NSERC-funded personnel and co-funds the MDA/NSERC Industrial Research Chair in Radar Remote Sensing and Signal Processing at the University of British Columbia.
Magistral Biotech Inc.

President and Chief Executive Officer: André Aubé
1060 Michèle-Bohec Boulevard, Suite 102, Blainville, Quebec   J7C 5E2
Tel.: (514) 979-7878   Fax: (514) 979-7888
E-mail: info@magistralbiotech.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 9
YEAR INCORPORATED: 1998
STOCK MARKET LISTING: TSX-V: MBS
INDUSTRIAL SECTOR: Pharmaceuticals and Biotechnology
WEB SITE: www.magistralbiotech.com

Products or Services
Magistral Biotech's mission is to supply the nutraceutical, food and pharmaceutical industries with chitosan-based active ingredients. The trade-marked product HEP-30™ used in the food industry helps lower blood cholesterol levels.

Magistral Biotech specializes in the development, manufacture and marketing of safe natural products that are scientifically proven to have therapeutic effects. One of Magistral Biotech's products, Libracol, is the most potent non-prescription anti-cholesterol treatment available today. It has no side effects and can be combined with other cholesterol treatments. Sabasol, a natural liquid, contributes to prostate function, and Palmcia is a two-step solution to hair loss. Magistral’s latest product, Provitor, is an effective solution for people experiencing a lack of energy.

NSERC Researchers
Magistral Biotech was founded as a result of close collaboration between Ryszard Brzezinski, Gilles Dupuis and Jean-Guy LeHoux of the Université de Sherbrooke. Dr. Brzezinski, a professor in the university’s Department of Biology, has received Discovery, Strategic Project, Genome Project, and Research Tools and Instruments Grants from NSERC for his work in biomolecular engineering. Gilles Dupuis is a professor in the Department of Biochemistry and director of the Université de Sherbrooke’s Centre d’étude et de valorisation de la diversité microbiene [microbial diversity research and development centre], where he has received an NSERC Discovery Grant. A Strategic Project Grant enabled the researchers to conduct studies that identified the link between the physical properties of chitosan and its cholesterol-reducing effect. This patented biotechnology, the product of NSERC-funded work, is covered by a licence agreement between the Université de Sherbrooke and Magistral Biotech, and is a key element of Magistral Biotech’s operations.
Maplesoft

President: C. James Cooper
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E-mail: info@maplesoft.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: Confidential
YEAR INCORPORATED: 1988
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.maplesoft.com

Products or Services
Maplesoft, formerly known as Waterloo Maple, is a leading developer of advanced mathematical and analytical software. Its innovative suite of products harnesses the power of mathematics, providing industry and academia with the most advanced mathematical tools, complete with fully integrated numerics and symbolics. If you touch math...you need Maple.

The Maplesoft core product suite includes Maple, the advanced, mathematical problem solving and programming environment of choice for mathematical problem-solving, exploration, data visualization and technical authoring; MapleNet, a full environment for on-line e-learning providing live interactive Web-based educational content and enterprise-wide collaboration through sharing of results data, and true analytical knowledge over the Internet; and Maple T.A., a Web-based system for creating tests, assignments and exercises, automatically assessing student responses and performance.

Maplesoft’s core suite is broadened by its Toolbox series, domain-specific tools to transform the core Maplesoft products to discipline-specific applications; and MapleConnect, a developer support program designed to help third party members of our unique community capitalize on their creativity, knowledge, ideas and energy by commercializing their intellectual property.

Its tools are used at over 90 per cent of advanced research institutions and universities worldwide, and over three million people worldwide use Maplesoft technology. Academic and commercial organizations have applied Maple in nearly every technical field, including physics, engineering, aerospace, finance, telecommunications, data analysis, quantum mechanics and many others.

Maplesoft is a privately held company, headquartered in Waterloo, Ontario.

NSERC Researchers
Maplesoft was co-founded by University of Waterloo computer science professor Dr. Keith Geddes. His research interests include algebraic algorithms for symbolic computation, the design of the Maple computer algebra system, and exploring the symbolic-numeric interface in scientific computing. Dr. Geddes has received numerous NSERC Discovery, Collaborative Research and Development, and Research Tools and Instruments Grants since the late 1970s.
MathResources Inc.

Chief Executive Officer: Ron Fitzgerald
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E-mail: ron@mathresources.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 12
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.mathresources.com

Products or Services
The underpinning of a technological society is a comprehensive understanding of mathematics. To that end, MathResources focuses specifically on developing the most robust math software available to teachers and students alike. The company’s mission is to be the world leader in interactive software and on-line content for mathematics.

Launched in 1996, MathResources unites the expertise of a mathematician, a computer scientist and a publishing executive. This combination of academic research and publishing experience provides MathResources with the broad-based skills necessary for success. These individuals provide the research and development alliances, authors and the evaluation and reviewing personnel required for the construction of sound, robust software.

MathResources has excellent lead products, licenses, alliances and contracts that are producing revenue and building a strong competitive position. The company also provides programming and consulting services to a variety of organizations. Current products include Let’s Do Math: Tools & Things; Let’s Do Math: Graphing & Calculating; MRI-Graphing Calculator for Pocket PC; and The MathResource: Interactive Math Dictionary. MathResources is poised to expand rapidly into each segment of the lucrative math education market.

NSERC Researchers
MathResources was founded by Dr. Jonathan Borwein, Dr. Carolyn Watters and Ron Fitzgerald. Dr. Borwein is a research professor in the Faculty of Computer Science at Dalhousie University where he also holds a Canada Research Chair in Distributed and Collaborative Research. In addition, he holds the Visiting Maclaurin Fellowship at the New Zealand Institute of Mathematics and its Applications. NSERC has funded Dr. Borwein with Discovery, and Research Tools and Instruments Grants since 1981. Dr. Carolyn Watters is a professor in the Faculty of Computer Science at Dalhousie University and former director of the university’s e-commerce program. She is now the Associate Dean of the Faculty of Graduate Studies and co-directs the Web Information Filtering Lab. NSERC has funded her research on information retrieval systems with Discovery Grants since 1992.
Products or Services
matREGEN is a start-up biomaterials and drug delivery company based on SpinFX, the company’s proprietary platform technology. This innovative technique is used to produce novel structures, such as porous tubes, composites and coatings. The method is simple, scalable and meets unmet needs within a diverse array of markets. SpinFX can be used to create patent tubes that match the mechanical properties of soft tissue yet have the strength to withstand compression at the implant site.

matREGEN’s core business is focused on the development of proprietary products within the health and life sciences market, specifically within the arthritis segments which is a multi-billion dollar industry.

NSERC Researchers
matREGEN was founded by Drs. Molly Shoichet and Paul Dalton to commercialize the SpinFX technology platform that was invented in Dr. Shoichet’s laboratory. Dr. Shoichet, the company’s president, holds the Canada Research Chair in Tissue Engineering and is a professor in the Department of Chemical Engineering and Applied Chemistry, Chemistry and Biomaterials, and the Department of Biomedical Engineering at the University of Toronto. She has received prestigious distinctions, such as a 2003 NSERC Steacie Fellowship, the Canadian Institute for Advanced Research’s Young Explorer’s Award (given to the top 20 scientists under 40 years of age in Canada) and Canada’s Top 40 under 40 (for innovation and leadership). She holds 16 patents and has also founded BoneTec, a development stage company. Dr. Shoichet is primarily focused on promoting nerve regeneration after spinal cord injury, for which there is no cure. This research is funded in part by NSERC Strategic Project, Research Tools and Instruments, Collaborative Research and Development, and Discovery Grants.
MBEC BioProducts Inc.

President: Ken Boutilier
Phipps-McKinnon Building, 10020 101A Avenue, Suite 870
Edmonton, Alberta   T5J 3G2
Tel.: (780) 425-7717   Fax: (780) 424-0941
E-mail: info@mbec.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 9
YEAR INCORPORATED: 2004
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.mbec.ca

Products and Services
Microbial biofilms are common in nature, causing the majority of infections/infestations in humans and in agricultural and industrial settings. Typical biofilm diseases include Pierce’s disease in grape, citrus and coffee crops, bovine mastitis, device-associated infections (catheters, artificial hips), cystic fibrosis lung infections, prostatitis, and inner ear infections. In a biofilm state an organism can be up to 1,000 times more resistant to antibiotics/biocides than the very same organism in a free-floating or planktonic state. This fact presents a significant problem, as all antibiotics and biocides have received indications for use based on planktonic susceptibility.

MBEC BioProducts develops products to address these problems using its patented technology, the MBEC Assay. The assay is a high throughput screening tool for the growth of biofilms and subsequent testing against antimicrobial agents. The company conducts its business in three areas: research and development to discover new antimicrobial agents and diagnostic tools, which has led to the filing of three patents for antimicrobial compounds; contract research for clients with biofilm problems including catheter, wound and drug development companies; and sales of the MBEC Assay to over 70 clients worldwide including academic researchers, pharmaceutical companies and biocide manufacturers.

Innovotech Inc. (TSX-V:IOT) is the parent company of MBEC BioProducts.

NSERC Researchers
MBEC BioProducts was co-founded by Drs. Howard Ceri and Merle Olson of the University of Calgary. Dr. Ceri is a professor in the Department of Biological Sciences and chair of the Biofilm Research Group. NSERC has supported his research with Discovery, and Research Tools and Instruments Grants. Dr. Olson holds the Westaim/ASRA Chair in Biofilm Research and is an adjunct professor in the Department of Biological Sciences at the University of Calgary. NSERC has supported Dr. Olson’s research with Discovery, Research Tools and Instruments, and Strategic Project Grants. Dr. Olson also serves as MBEC BioProducts’ chief scientific officer.
MDS Sciex

President: Dr. Andy Boorn
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Tel.: (905) 660-9005  Fax: (905) 660-2601
E-mail: info@sciex.com

**ANNUAL REVENUE:** $282,000,000
**NUMBER OF EMPLOYEES IN CANADA:** 500
**YEAR INCORPORATED:** 1974
**STOCK MARKET LISTING:** NYSE: MDZ
**TSX:** MDS
**INDUSTRIAL SECTOR:** Computer, Electronic and Electrical Equipment
**WEB SITE:** www.sciex.com

**Products or Services**
MDS Sciex is the analytical instrumentation division of MDS Inc., a diversified health and life sciences company. As a global leader in the research, design and development of mass spectrometers, MDS Sciex will be making a significant impact on the understanding of protein function in the field of proteomics and metabolomics. Through the development of innovative mass spectroscopy-based tools, MDS Sciex will extend the bioanalytical capabilities of scientists in the field of proteomics and metabolomics.

At the pinnacle of a full range of triple quadrupole platforms offered by MDS Sciex, the API 4000™ system creates a new standard for ruggedness and reliability that enables even greater productivity and simplicity. The API 150ex, API 2000™ and API 3000™ are also part of the comprehensive line of advanced technology solutions for LC/MS and LC/MS/MS (Liquid Chromatography/ Tandem Mass Spectrometry).

The API QSTAR™ Pulsar Quadrupole Time-of-Flight system provides the highest sensitivity for precursor and product ion scanning in LC/MS/MS experiments.

The ELAN® DRC II ICP-MS offers the best detection limits in trace element determination. It eliminates interferences before they reach the quadrupole mass spectrometer. The ELAN® 9000 is ideal for environmental, clinical, geochemical and general testing laboratories with moderate to heavy loads of ultratrace level samples. ICPMS products are offered through PerkinElmer/ MDS Sciex.

**NSERC Researchers**
MDS Sciex was incorporated in 1974 by a group of researchers headed by Dr. Barry French at the Institute of Aerospace Studies of the University of Toronto. Dr. French, now retired from academic life, has been supported by NSERC Discovery, and Research Tools and Instruments Grants for his research into the detection of trace substances.

MDS Sciex contributes to the development of Canadian researchers through its involvement in NSERC’s Industrial Research Fellowships program. In 1995, the company co-sponsored the NSERC-Sciex Industrial Research Chair in Scientific Instrumentation at the University of British Columbia. In 1998, MDS Sciex co-sponsored the NSERC-Sciex Industrial Research Chair in Analytical Mass Spectrometry at York University. MDS Sciex is an industrial partner with NSERC in funding four other major projects at Canadian universities and supports several other Canadian university laboratories and research institutes.
Products or Services

Membrane Reactor Technologies (MRT) is commercializing its patented Fluidized Bed Membrane Reactor (FBMR) technology for the production of pure hydrogen. This technology will supply pure hydrogen for industrial uses such as food processing, chemical synthesis and electronics manufacture, and for energy applications involving fuel cells.

A membrane reactor is a device that simultaneously carries out a reaction and membrane-based separation in the same physical enclosure. The FBMR combines in a single vessel fluidized reforming catalyst particles and hydrogen-permeable inner surfaces, called membranes, that extract pure hydrogen as it is produced. This single vessel replaces two reactors (steam methane reformer and shift converter) and a pressure-swing absorption unit in the conventional process by which most hydrogen is produced. When integrated into a complete system, MRT’s process performs steam methane reforming of feeds such as natural gas with higher yields, higher energy efficiency and lower cost than conventional reforming processes.

As part of its core competence, MRT has developed significant expertise in the manufacture and application of hydrogen-permeable membranes. MRT is investigating applying membranes to several separation and purification applications as part of its development activity.

NSERC Researchers

Membrane Reactor Technologies (MRT) was founded by Drs. Alaa-Eldin Adris, C. Jim Lim, Said Elnashaie, John Grace, Barry Pruden and Surajit Roy to further develop the FBMR technology they invented. Drs. Grace and Lim are both professors in the Department of Chemical and Biological Engineering at the University of British Columbia. Dr. Grace also holds the Canada Research Chair in Clean Energy Processes. Drs. Grace and Lim are leading authorities on fluidization and chemical reaction engineering. Their work has been supported by NSERC Discovery, Industrially Oriented Research, Research Tools and Instruments, and Strategic Project Grants. Dr. Pruden, now a Professor Emeritus at the University of Calgary, held an NSERC Industrial Research Chair in Hydrogen Technologies sponsored by a group of seven Canadian oil and coal companies. Dr. Pruden co-invented the CANMET Hydrocracking Process and has had extensive experience with industrial production of hydrogen and its application to refining processes.

Membrane Reactor Technologies Ltd.

President and Chief Executive Officer: Michael Rushton
3650 Wesbrook Mall, Vancouver, British Columbia V6S 2L2
Tel.: (604) 822-4343 Fax: (604) 822-1659
E-mail: info@membranereactor.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 12
YEAR INCORPORATED: 1998
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Chemicals and Materials
WEB SITE: www.membranereactor.com

Membrane Reactor Technologies Ltd.
Microbridge Technologies Inc.

President and Chief Executive Officer: Michael S. Foster
1980 Sherbrooke Street West, Suite 505, Montréal, Quebec   H3H 1E8
Tel.: (514) 938-8089   Fax: (514) 938-9089
E-mail: info@mbridgetech.com

**Annual Revenue:** Confidential
**Number of Employees in Canada:** 10
**Year Incorporated:** 1999
**Stock Market Listing:** Not listed
**Industrial Sector:** Computer, Electronic and Electrical Equipment
**Web Site:** www.mbridgetech.com

**Products or Services**
Microbridge Technologies specializes in micro-systems technology for electronics, micro-devices and sensor-based systems. Microbridge uses micro-thermal devices based on conventional silicon integrated circuit technology to create solutions for a variety of industries. These devices utilize a micro-membrane with embedded micro-heater, suspended over a cavity in a silicon chip. The Rejustor™ and eTCR technologies form the basis for a broad family of products in the form of electronically adjustable resistive micro-devices that provide an unprecedented combination of high precision, price and ease of use.

**NSERC Researchers**
Microbridge Technologies was founded by Drs. Les M. Landsberger, J. David Cheeke and Oleg Grudin. Dr. Cheeke, Microbridge’s vice-president of operations, has over 25 years’ experience in device physics and sensors research. He was a professor at Concordia University and the chair of the Department of Physics from 1992 to 2000. NSERC has supported his research program since 1975 with Discovery, Research Tools and Instruments, Strategic Project, and Collaborative Research and Development Grants. Dr. Landsberger is the company’s chief technology officer and a professor in the Department of Electrical and Computer Engineering at Concordia University. He also holds a Concordia Research Chair in Microsystems Technology. NSERC has supported his work on microelectronics fabrication activities with Discovery Grants.
MIGENIX Inc.

President and Chief Executive Officer: James DeMesa
3650 Wesbrook Mall, Vancouver, British Columbia V6S 2L2
Tel.: (604) 221-9666  Fax: (604) 221-9688
E-mail: info@migenix.com

ANNUAL REVENUE: $2,971,557 (2004)
NUMBER OF EMPLOYEES IN CANADA: 37
YEAR INCORPORATED: 1993
STOCK MARKET LISTING: TSX: MGI  US OTC: MGIFF
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.migenix.com

Products or Services
MIGENIX, formerly known as Micrologix Biotech, is committed to advancing therapy, improving health and enriching life by developing and commercializing drugs for the prevention and treatment of major medical diseases and certain conditions with unmet medical need. With its expertise and experience in product development, the company is focused on advancing its pipeline of product candidates in the areas of infectious and degenerative diseases.

MIGENIX is headquartered in Vancouver, British Columbia, with U.S. operations in San Diego, California.

NSERC Researchers
MIGENIX was originally established around a technology to mass-produce various peptides through recombinant DNA and specific peptide sequences developed by Dr. Robert E.W. Hancock and co-workers. Dr. Hancock is a professor in the Department of Microbiology and Immunology and the director of the Centre for Microbial Diseases and Immunity Research at the University of British Columbia. He also holds a Canada Research Chair in Pathogenomics and Antimicrobials and was the founding scientific director of the Canadian Bacterial Diseases Network, a Network of Centres of Excellence. Dr. Hancock was inducted as an Officer of the Order of Canada in 2001. NSERC has supported Dr. Hancock’s research with Discovery, and Research Tools and Instruments Grants.
Products or Services
Millenium Biologix is focused on the development and commercialization of next-generation orthobiologic and skeletal tissue regeneration products that promote the repair and natural healing of human bone and other tissues. The company’s strength in developing leading treatments for regenerative medicine is based on the successful integration of three core competencies in advanced biomaterials, biologics and engineering.

Skelite™, which was launched for commercial sale in June 2003, is designed specifically with a unique composition containing trace mineral elements as found in human bone. Once implanted, the human body interacts with the Skelite™ synthetic material as if it were real bone. After the initial repair process restores mobility, the body continues to remodel the injury site. In this process, Skelite™ is progressively replaced by additional new bone to the point that the implant is completely removed by natural cellular processes and only high quality natural bone remains at the injury site.

Primacoll™ and Peptos™, currently in late-stage development, are synthetically manufactured small peptides that stimulate targeted bone or cartilage tissue growth. These small entities, unlike the larger protein growth factors currently available for use, have specific binding strategies with directed mechanisms of action that provide greater tissue specificity. Millenium’s peptides can be manufactured in a simpler and more reliable, cost-effective chemical synthesis that the company believes will allow Primacoll™ and Peptos™ to be used in a broad range of orthopedic and dental applications once it is approved.

Millenium’s automated cell culture and tissue engineering system, ACTES™, will offer an attractive alternative to the current uneconomical business model for cell therapy and is expected to become the international standard in this new field of medical practice. ACTES™ will provide automated end-to-end control over the full biological process of tissue engineering, from biopsy to tissue creation, within clinics and hospitals directly at the point-of-care. It enables autologous cell and tissue production in a disposable, patient-dedicated bioreactor system, which is more cost-effective than the current model for cell therapy.

NSERC Researchers
Millenium Biologix’s bone material was co-invented by Drs. Michael Sayer and John Davies. Dr. Sayer is a Professor Emeritus of physics at Queen’s University and Dr. John Davies is a professor of biomaterials at the University of Toronto. Both researchers have received NSERC support for their work on biomaterials. More recently, NSERC has supported collaborative work between Millenium Biologix, Dr. Sayer and Dr. Malcolm Stott, professor of physics at Queen’s University.
MXT Inc.

President and Chief Executive Officer: Dr. John Ström-Olsen
1744 William Street, Suite 104, Montreal, Quebec   H3J 1R4
Tel.: (514) 934-3377   Fax: (514) 934-3990
E-mail: info@m-x-t.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 6
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Chemicals and Materials
WEB SITE: www.m-x-t.com

Products or Services
MXT manufactures metal fibres using a melt-extraction process that was developed at McGill University to transform molten liquids, such as metal and ceramics, into fine fibres. These fibres have many potential applications, including electronic article surveillance, article location and antounterfeiting. As an anti-theft process, the threads offer a low cost, small and flexible process to the retail industry. Unlike other magnetic threads, MXT’s fibres can be woven right into the fabric which can be incorporated into labels or sewn into clothing, setting off alarms if customers try to leave the store without getting the items deactivated at the cash.

MXT’s fibres are also used as sensor elements, exploiting their large giant-magneto impedance, and as heat-exchange material in cryo-coolers.

More recently the company has developed a radically new magnetic marking material, SSDW, in which the active and deactivate elements are integrated for the first time into a single product.

NSERC Researchers
MXT’s president and founder, Dr. John Ström-Olsen, developed the unique process to transform molten liquids into fibres at McGill University. NSERC has supported Dr. Ström-Olsen’s research program with Discovery, Strategic Project, Research Tools and Instruments, and Collaborative Research and Development Grants since 1979.
Products or Services
Mycology is clearing the way for the safe and effective control of fast-growing deciduous trees, often considered to be forest “weeds” in reforestation sites. These hardwood trees consume large amounts of light, nutrients, and water. They also take up a lot of space, pose a hazard to power lines, and threaten to overgrow roadways, pipelines, parklands and recreation areas. MycoLogic’s first product, CHONTROL™, uses a naturally occurring fungus, Chondrostereum purpureum, to maintain clearings by preventing the resprouting of these problematic deciduous trees. CHONTROL™ was the first biological control agent used in the Canadian forestry sector.

Current strategies to control deciduous tree growth involve cutting, burning or treating brush with chemical herbicides. These practices can be costly, dangerous and damaging to the environment. MycoLogic’s ECO-clear is a cost-effective and environmentally safe alternative to chemical herbicides. It is non-toxic, does not build up in the environment, and its effects are limited to the area where it is applied.

NSERC Researchers
Mycology was founded by Dr. William Hintz, an associate professor of biology at the University of Victoria specializing in plant pathogens and genetics. He has done extensive research in collaboration with Canadian Forestry Service researchers Drs. Ron Wall and Simon Shamoun. Dr. Hintz’s work is supported by NSERC’s Discovery, Industrially Oriented Research, and Research Tools and Instruments Grants.
Nanox Inc.

President and Chief Executive Officer: J. Gary McDaniel
4975 Rideau Street, Suite 100, Québec, Quebec   G2E 5H5
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E-mail: nanox@nanoxnps.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 10
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Chemical Products and Materials
WEB SITE: www.nanoxnps.com

Products or Services
Nanox works in the nanotechnology sector and has developed an innovative manufacturing technology. It develops and manufactures high-performance catalysts made up of nanocrystalline perovskites. Using patented production technology, Nanox is able to design custom high-performance catalysts to meet the challenges faced by the automotive catalyst industry. The company’s products also ensure better emissions control with a significantly lower precious metals content.

NSERC Researchers
Nanox was created as a result of the development of a process by André Van Neste and Serge Kaliaguine at Université Laval. Dr. Van Neste, an associate professor in the university’s Department of Mining, Metallurgy and Materials, joined Nanox in 2001 as vice-president. Dr. Kaliaguine is a professor in the Department of Chemical Engineering at Université Laval. NSERC has supported the two researchers’ work through Discovery, Research Tools and Instruments, and Strategic Project Grants. In addition, Dr. Kaliaguine is the senior holder of the NSERC Industrial Research Chair in Nanomaterials: Adsorbents, Catalysts and Membranes, in which Nanox is a partner.
Newmerical Technologies International

President and Chief Scientific Officer: Dr. Wagdi Habashi
680 Sherbrooke Street West, 7th Floor, Montréal, Quebec   H3A 2M7
Tel.: (514) 398-2671   Fax: (514) 398-8454
E-mail: nti@newmerical.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 12
YEAR INCORPORATED: 1998
STOCK MARKET LISTING: TSX-V: CFD
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.newmerical.com

Products or Services

Newmerical Technologies International (NTI) provides state-of-the-art software and engineering services for multi-disciplinary Computational Fluid Dynamics (CFD) simulations. This software is used by engineers, environmentalists and architects to simulate situations, in nature and in industry, that involve fluid flow and heat transfer. This allows for the rapid and accurate virtual design of a component or a process, without the need to build a prototype.

NTI has found wide applications for its CFD simulations in the aerospace, automotive, architectural, naval, power and process, and food and beverage industries. Today, a large number of leading aerospace corporations use NTI’s in-flight icing simulation system to assist them in increasing safety and in certifying their aircraft for flying into known icing. NTI’s software is also used extensively in assessing wind effects around buildings and attached devices. NTI’s new products involve novel Mesh Optimization software and advanced software for the Optimal Design of aircraft.

NSERC Researchers
Dr. Wagdi (Fred) Habashi, president of Newmerical Technologies International, is a McGill University professor of mechanical engineering, the director of its renowned Computational Fluid Dynamics Laboratory, and project leader of the CLUMEQ (Consortium Laval, UQAM, McGill and Eastern Quebec) Supercomputer Centre. He also holds an NSERC Industrial Research Chair sponsored by the J. Armand Bombardier Foundation with the participation of Silicon Graphics Inc. He is a fellow of the Canadian Academy of Engineering and a fellow of the American Society of Mechanical Engineers. He was selected by the Montréal Gazette as one of the ten top scientists in Montréal in its series, “Montréal the Year 2000,” and was featured by the Canada Foundation for Innovation as one of Canada’s top 25 scientists in 2002.

Newmerical is the result of 30 years of Dr. Habashi’s university research. NSERC supports Dr. Habashi’s work with Discovery, Strategic Project, and Research Tools and Instruments Grants. In 1988, Dr. Habashi was awarded an NSERC Steacie Fellowship for outstanding research in the field of computational aerodynamics.

NSERC Researchers
Dr. Wagdi (Fred) Habashi, president of Newmerical Technologies International, is a McGill University professor of mechanical engineering, the director of its renowned Computational Fluid Dynamics Laboratory, and project leader of the CLUMEQ (Consortium Laval, UQAM, McGill and Eastern Quebec) Supercomputer Centre. He also holds an NSERC Industrial Research Chair sponsored by the J. Armand Bombardier Foundation with the participation of Silicon Graphics Inc. He is a fellow of the Canadian Academy of Engineering and a fellow of the American Society of Mechanical Engineers. He was selected by the Montréal Gazette as one of the ten top scientists in Montréal in its series, “Montréal the Year 2000,” and was featured by the Canada Foundation for Innovation as one of Canada’s top 25 scientists in 2002.

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Northern Radar has developed a state-of-the-art Surface Wave Radar (SWR) system that can monitor over 225,000 square kilometres of the ocean surface while providing timely activity reports. The task of surveillance of an Exclusive Economic Zone (EEZ), requiring observation of millions of square kilometres of ocean, can benefit tremendously from using Northern’s SWR technology. The SWR technology can detect icebergs, measure ocean waves, monitor surface currents, track low-flying aircraft, and track vessels located up to 450 kilometres from shore.

SWR systems transmit at frequencies in the HF frequency band, at frequencies several orders of magnitude lower than traditional radar systems. The ocean surface is highly conductive, which effectively “guides” vertical polarized HF radio signals with very low attenuation. As a result, HF SWR systems can provide coverage to 250 nautical miles range. The versatility of the system has attracted the interest of industry, government and academia.

Oil companies use the system to follow ocean wave conditions to protect their offshore rigs. Information about surface currents helps biologists to estimate fish stocks and search and rescue teams to track lifeboats. The Northern Radar technology is more affordable than satellite systems and is able to operate in real-time, with continuous coverage of the monitored zone.

NSERC Researchers

Northern Radar’s ground wave radar system was developed by Dr. John Walsh, a Professor Emeritus at Memorial University of Newfoundland. Dr. Walsh has investigated ground wave radar systems since 1981, with the support of NSERC Discovery, Strategic Project, and Collaborative Research and Development Grants. He now serves as vice-president, R&D, at Northern Radar.
Products or Services
Novator Systems is a leading provider of outsourced e-retail services. The company designs, builds, hosts, monitors and continuously improves e-retail solutions for clients like FTD, Lucasfilm, and Time Warner.

Novator’s expertise in all aspects of e-retail – from e-merchandizing to e-marketing – caught the attention of FTD, the world’s premier florist, in 1994. Novator now powers and manages FTD.com, a complex system that includes databases that hold pricing and product information, e-retail applications that process customer transactions, a back-end credit card verification system and a content-delivery network service. FTD.com leads the major on-line flower retailers with its easy ordering procedures, a wide selection of customized products and access to special promotions and customer loyalty programs.

NSERC Researchers
Novator Systems was founded by Mark and Tressa Fox. Dr. Mark Fox, the company’s chairman and chief executive officer, is a professor of industrial engineering with a cross appointment in the Department of Computer Science at the University of Toronto. Dr. Fox heads the Enterprise Integration Laboratory and held the NSERC Industrial Research Chair in Enterprise Integration. NSERC has supported Dr. Fox’s research with Discovery and Technology Partnership Grants.
NxtPhase Corporation

Chief Executive Officer: Andrea Johnston
3040 E. Broadway, Vancouver, British Columbia V5M 1Z4
Tel.: (604) 215-9822 Fax: (604) 215-9833
E-mail: info@nxtphase.com

Products or Services
NxtPhase develops digital and fibre-optic solutions that will change the way high-voltage electric power is managed by utilities worldwide. NxtPhase products improve reliability in energy-supply systems through innovations in digital protection and fibre-optic measurement.

NxtPhase electric power sensors offer superior performance over existing technologies, with unparalleled higher accuracy, broader dynamic range, wider bandwidth, improved safety and environmental benefits. At a fraction of the weight of older equipment, NxtPhase sensors are a lighter, much less bulky alternative, allowing easy installation in the field.

NSERC Researchers
NxtPhase was co-founded by Dr. Nicolas Jaeger, a professor of electrical and computer engineering at the University of British Columbia. Dr. Jaeger pioneered NxtPhase’s integrated-optic voltage sensing technology. NSERC has supported Dr. Jaeger’s work with Collaborative Research and Development, Discovery, Research Tools and Instruments, Cooperative Activities, and Industrially Oriented Research Grants. Dr. Jaeger also works closely with JGKB Photonics, another company he co-founded, to guide their technology development.

Dr. Farnoosh Rahmatian, the director of R&D at NxtPhase, is a former NSERC Industrial Postdoctoral Fellow who worked with Dr. Jaeger at the University of British Columbia.

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 50
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Mining, Oil, Gas and Utilities
WEB SITE: www.nxtphase.com
Ocean Nutrition Canada Limited

President and Chief Executive Officer: Robert Orr
101 Research Drive, Dartmouth, Nova Scotia   B2Y 4T6
Tel.: (902) 480-3200   Fax: (902) 480-3199
E-mail: info@ocean-nutrition.com

Products or Services
Ocean Nutrition Canada Limited (ONC) was founded in 1997 through the vision of its parent company, Clearwater Fine Foods Inc., the largest vertically integrated seafood company in Canada. ONC is a leading innovator and provider of quality marine-based natural health and nutrition products in the world market. ONC’s primary product focus is MEG-3™ brand Omega-3 EPA/DHA purified fish oil ingredients for the global dietary supplement and health food ingredient markets.

ONC’s oils have set global quality standards and are the first ingredients to achieve U.S. Pharmacopoeia verification. The company manufactures products to GMP standards (Good Manufacturing Practice Regulations set by the U.S. Food and Drug Administration) in government-certified facilities. ONC uses proprietary manufacturing processes for refining and concentrating Omega-3 fatty acids from fish, resulting in the finest quality oil at a cost-effective price. The company has the only manufacturing plant in North America that can both refine and concentrate Omega-3 fish oil in commercial quantities. A plant in Arcadia, Wisconsin has also been acquired by ONC to produce larger quantities of MEG-3™ powder ingredient to meet increasing demand.

ONC has North America’s largest privately owned research lab dedicated exclusively to the discovery of new marine natural products. The company has 13 PhDs on staff and over 40 people researching bioactive ingredients from the marine environment. The company has the most sophisticated analytical equipment in the industry, which guarantees the quality, efficacy and consistency of its natural Omega-3 fatty acids. Every batch of Omega-3 oil produced by ONC is put through more than 50 in-process and final quality checks before it leaves the plant.

NSERC Researchers
The distillation technology used by ONC was co-developed by Dr. Robert Ackman, Professor Emeritus at the Canadian Institute of Fisheries Technology, Dalhousie University. Dr. Ackman, who sits on ONC’s Scientific Advisory Board, is the world’s leading expert in marine food sources of Omega-3 fatty acids and of fish oil concentrates in capsule form for clinical applications. Dr. Ackman has received NSERC Research Tools and Instruments, and Strategic Project Grants for his research on fish meal and silage lipids, antioxidants and pigments, and other nutrition matters.
Products or Services

Open Text is the market leader in providing Enterprise Content Management (ECM) solutions that bring together people, processes and information. The company’s software seamlessly combines collaboration with content management, transforming information into knowledge that provides the foundation for innovation, compliance and accelerated growth.

Open Text’s legacy of innovation began in 1991 with the successful deployment of the world’s first search engine technology for the Internet. Today, Open Text supports 17 million users across 13,000 deployments in 31 countries and 12 languages worldwide.

Enterprise Content Management (ECM) represents a critical new stage in the advance of the Information Age. It is more than just a product or a solution. It describes both a philosophical approach and the underlying technologies used to help businesses transform their content into competitive advantage.

The Livelink ECM solutions bring together a number of collaboration, content and process technologies into integrated solutions that work harmoniously to capture ideas, experiences and knowledge, and manage the complete life cycle of electronic documents, from their creation to archive and eventual deletion.

NSERC Researchers

The original technology (the text database management system with the fastest search engine available – searching through 60 million words per second) was developed as part of a collaborative research and development project, conducted by Drs. Frank Tompa and Gaston Gonnet. It was funded jointly by NSERC and the Oxford University Press, with additional support from the University of Waterloo and private foundations. Dr. Tompa is a computer science professor at the University of Waterloo. He continues to research data management and structuring and has more recently collaborated with industry in exploring how to augment relational database systems to support XML (Extensible Markup Language). His research program is supported by NSERC Discovery, Strategic Project, and Collaborative Research and Development Grants. Dr. Gonnet is an adjunct professor at Waterloo and is currently pursuing research in symbolic and algebraic computation, computational biochemistry, and algorithm design and analysis at the Swiss Federal Institute of Technology in Zurich.
Optech Inc.

President: Donald Carswell
100 Wildcat Road, Toronto, Ontario, M3J 2Z9
Tel.: (416) 661-5904  Fax: (416) 661-4168
E-mail: general@optech.ca

Products or Services
Since its beginnings at the Department of Physics at York University, Optech has grown to be a world leader in the development, manufacture and sale of advanced laser-based instruments. Its products, based on the company’s core expertise in pulsed laser radar (lidar), are widely used for terrestrial and marine surveying, space and atmospheric monitoring, 3D laser imaging and industrial process measurements. Optech developed the world’s first operational airborne lidar bathymeter, used for precise measurements of underwater marine topography. The Shoals-Hawkeye system, based on early research done at York University, has won Optech an international clientele. Optech’s customers include surveying, mining and industrial corporations, research institutes, government departments and international space agencies.

Optech has a subsidiary, Optech International, in the U.S. and has strategic alliances with a number of international collaborators. Ninety per cent of Optech’s business is export, supplying about three-quarters of the world market for commercial airborne laser survey systems.

Optech has received the Canadian Award for Business Excellence in Innovation, as well as awards for its achievements in exports and R&D.

NSERC Researchers
Dr. Allan Carswell, a Professor Emeritus of physics at York University, founded Optech in 1974 to commercialize his research findings on optical radar systems. Dr. Carswell’s early research was funded by NRC and, over the years, NSERC has provided consistent support through Discovery Grants.
Performance Plants is a private biotechnology company that uses proprietary technologies to increase the value of commercial crops. The focus is on four major crops: corn, soybean, cotton and canola. The company’s business model is to license its technologies to leading seed companies and germplasm developers. Major players in the seed industry have formed strategic partnerships with Performance Plants.

Performance Plants’ pipeline includes three complementary technologies that offer spectacular step-changes in the development of commercial crops. The technologies may be used individually or “stacked” together to create a significant boost in productivity and value.

The Yield Protection Technology (YPT™) technology is a mechanism that allows plants to tolerate water stress and provide yield increases over their parent varieties regardless of the rainfall. The company’s Master Regulator Gene (MRG) adjusts the levels of oil and fibre in seeds. Performance Plant’s third technology, the Heat Stress Gene (HSG) stabilizes yield in high temperature conditions. Unprotected crops experience dramatic seed losses when temperatures rise even a few degrees above optimum.

Performance Plants leases research and office facilities in the BioSciences Complex at Queen’s University and similar facilities at Innovation Place in Saskatoon. The research team includes molecular biologists, plant physiologists and biochemists.

Performance Plants was formed by Drs. David Dennis and Daniel Lefebvre, both professors in the Department of Biology at Queen’s University. Dr. Dennis serves as Performance Plants’ president and chief executive officer. His research program has been supported by NSERC with Discovery, Strategic Project, and Research Tools and Instruments Grants since 1968.

Performance Plants teamed with NSERC and the University of Toronto to establish an NSERC Industrial Research Chair in Plant Biotechnology held by Dr. Peter McCourt. The company collaborates extensively with other NSERC-supported scientists at Queen’s and the Universities of Toronto, Waterloo and McMaster, and works with numerous NSERC Industrial Research Fellows and NSERC-funded students.

Products or Services
Performance Plants Inc.
President and Chief Executive Officer: Dr. David Dennis
116 Barrie Street, Suite 4600, Kingston, Ontario K7L 3N6
Tel.: (613) 545-0390 Fax: (613) 545-3618
E-mail: information@performanceplants.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 33
YEAR INCORPORATED: 1995
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.performanceplants.com
Phero Tech Inc.

President and Chief Operating Officer: Alan Vaudry
7572 Progress Way, Delta, British Columbia V4G 1E9
Tel.: (604) 940-9944 Fax: (604) 940-9433
E-mail: info@pherotech.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 20
YEAR INCORPORATED: 1982
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.pherotech.com

Products or Services
Phero Tech is a world leader in the development, manufacture and sale of non-pesticidal insect pest management monitoring and control products, using pheromones, semiochemicals and traps for the forestry, agriculture, apiculture and commercial industries. Semiochemicals are message-bearing chemicals that insects and other organisms use for communication purposes. For instance, semiochemical lures and traps can be used to monitor pest populations or to mass trap pests as a means of population control or reduction.

Phero Tech manufactures and markets QMP, a complex pheromone mixture from the queen honeybee mandibular gland. Phero Tech QMP is the active ingredient in Fruit Boost, a pollination aid for fruit crops, as well as Bee Boost, a product used to manipulate bee behaviour.

Phero Tech maintains a laboratory dedicated to semiochemical synthesis, formulation and analysis, as well as a lure and trap manufacturing facility.

NSERC Researchers
Dr. John Borden is a Professor Emeritus in the Department of Biological Sciences at Simon Fraser University and the company’s director of research and development. His research interests lie in insect chemical ecology and semiochemical-based pest management. NSERC/NRC have supported Dr. Borden’s research through a number of grants since 1967. Numerous products currently marketed by Phero Tech have resulted from technology transfer from Dr. Borden’s research program at SFU.
Products or Services
PhoeniX Technologies manufactures Visualeyez, a wide-angle, high-speed and high-resolution real-time active-optical 3D motion capture/tracking system. With its worldwide-patented enabling technology, Visualeyez systems are powerful enough for real-time 3D content creation in multifarious entertainment applications, yet sophisticated and accurate enough for scientific motion analysis, control and virtual reality research.

PhoeniX Technologies provides imaginative motion capture solutions and resources for a number of applications, including, but not limited to: film and television special effects, computer graphic animations, computer and video games development, virtual reality simulations, and camera tracking. Visualeyez systems can be used for scientific research, such as movement analysis, computer-aided surgery, bio-mechanical research, tele-robotics, physiotherapy, industrial measurement and control, and reverse engineering.

Today, PhoeniX Technologies Incorporated has systems installed worldwide. The company is poised to transcend the boundaries of contemporary real-time motion capture technology and deliver a new echelon of realism and performance to graphics and motion analysis situations.

NSERC Researchers
Dr. Chris C.H. Ma, PhoeniX Technologies’ president, invented the Visualeyez system when he was an assistant professor in the Department of Electrical and Computer Engineering at the University of British Columbia. Funded initially by NSERC Discovery, and Research Tools and Instruments Grants, Dr. Ma developed a crude, but innovative sensor which eventually resulted in the Visualeyez system.
Plasmionique Inc.

President: Dr. Andranik Sarkissian
1650 Lionel Boulet Boulevard, Suite 171B, Varennes, Quebec J3X 1S2
Tel.: (450) 929-8154 Fax: (450) 929-8102
E-mail: info@plasmionique.com

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<td>WEB SITE:</td>
<td><a href="http://www.plasmionique.com">www.plasmionique.com</a></td>
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**Products or Services**

Plasmionique is an R&D company that was created to commercialize processes and tools based on plasma technologies. The company specializes in custom design and development of plasma-based surface engineering equipment, including PVD and PECVD systems as well as various types of plasma sources used for surface cleaning, activation and advanced material synthesis.

**NSERC Researchers**

Plasmionique was founded by Dr. Andranik Sarkissian, a former physics professor at the Institut national de recherche scientifique, Centre Énergie, Matériaux et Télécommunications. An NSERC Discovery Grant in 1994 allowed him to start research in plasma assisted surface engineering, part of Plasmionique’s current R&D activities.
Platform Computing Inc.

Chief Executive Officer and Chairman: Dr. Songnian Zhou
3760 14th Avenue, Markham, Ontario L3R 3T7
Tel.: (905) 948-8448   Fax: (905) 948-9975
E-mail: info@platform.com

ANNUAL REVENUE: $69,915,689
NUMBER OF EMPLOYEES IN CANADA: 275
YEAR INCORPORATED: 1992
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.platform.com

Products or Services
Platform Computing is the world’s leading provider of distributed computing software solutions. From desktop to grid computing, Platform’s distributed computing solutions optimize existing computing resources to reduce time-to-market, improve the quality of results and maximize the return on an organization’s information technology investments.

Platform’s distributed computing solutions combine workload management, resource management and performance management components. Platform’s products operate seamlessly across an organization’s computing environment, including networked UNIX, Linux and Windows-based servers, desktops, supercomputers and clusters.

Platform’s distributed computing solutions are deployed in a wide range of industries, including life sciences and pharmaceuticals. The company provides distributed and grid computing solutions to over 1,700 customers worldwide, and its client list reads like the Fortune 500: Nortel Networks, Lucent Technologies, Bombardier Group, DuPont & Co., General Electric, Sony, Hewlett Packard and Deutsche Bank, to name a few.

Platform also has significant partnerships with leading system vendors, including Compaq, HP, IBM, SGI, Fujitsu, Hitachi and Sun Microsystems (all of which are also Platform customers), as well as grid computing partnerships with companies such as IBM, HP, SGI, and Compaq.

NSERC Researchers
Co-founder, Songnian Zhou, is the chairman and chief technology officer of Platform Computing. Dr. Zhou, a professor of computing science at the University of Toronto, invented the LSF (Load Sharing Facility) software. The LSF prototype was tested and applied successfully at Bell Northern Research (BNR) under a collaborative research and development project jointly funded by NSERC and BNR.

Dr. Zhou is the driving force behind Platform’s product strategy and evolution. In less than 10 years, Dr. Zhou has taken Platform Computing from a staff of three in offices at the University of Toronto to a more than 200-strong, profitable company with offices around the world.
Products or Services
Automobile manufacturers are continually looking for new and innovative ways to reduce costs and weight. Powerlasers’ patented technology for the production of laser-welded blanks allows automakers to design weight reduction and cost savings into new vehicles. Laser-welded blanks consist of two or more pieces of steel of different thickness or composition, joined together by a laser welding process.

Powerlasers produces a wide variety of components for customers such as General Motors and Daimler Chrysler and is regarded as one of the top laser welding suppliers of automotive parts in the world today. The company employs approximately 230 people at its facilities in Concord and Kitchener, Ontario, and Pioneer, Ohio.

Dofasco Inc, headquartered in Hamilton, Ontario, acquired Powerlasers as a 100% subsidiary in May 2000 as part of its “Solution In Steel” strategy. Dofasco trades on the Toronto Stock Exchange under the DFS symbol.

NSERC Researchers
Powerlasers was established by Dr. Walt Duley, a University of Waterloo professor of physics specializing in laser technology. Dr. Duley has received NSERC Discovery, Collaborative Research and Development, and Research Tools and Instruments Grants.
Prescient NeuroPharma Inc.

President and Chief Executive Officer: Leanne Bate
2386 East Mall, Suite 307, Vancouver, British Columbia  V6T 1Z3
Tel.: (604) 822-3503  Fax: (604) 822-3506
E-mail: info@prescientneuropharma.com

**Annual Revenue:** Confidential

**Number of Employees in Canada:** 4

**Year Incorporated:** 1992

**Stock Market Listing:** TSX: PNO

**Industrial Sector:** Pharmaceuticals/Biotechnology

**Web Site:** www.prescientneuropharma.com

*Products or Services*

Prescient NeuroPharma is a Vancouver-based drug development company specializing in small molecule therapeutics targeting major central nervous system conditions, such as anxiety disorders, neuroprotection during ischemia and neurodegenerative diseases.

PRE703, Prescient’s lead candidate, is a competitive metabotropic glutamate receptor (mGluR) antagonist at the pre-clinical stage showing in vivo efficacy for anxiety and neuroprotection with minimal side effects and toxicology profiles. Prescient’s medicinal chemistry team has developed a focused library of 60 small molecule new chemical entities targeting mGluRs covering seven chemical classes. The company has obtained in vivo data indicating efficacy of many of these compounds for anxiety disorders and neuroprotection.

Prescient’s first drug candidate, Anhydrovinblastine (AVLB), a third-generation chemotherapeutic agent, has completed a Phase I, single centre, open label, non-randomized, dose finding safety and tolerance study. Based on its mechanism of action and pre-clinical data, Prescient NeuroPharma believes that AVLB may have significant utility in the treatment of breast, non-small cell lung, cervical and colon cancer as well as non-Hodgkin lymphoma. AVLB is currently licensed to Keryx Biopharmaceuticals (formerly ACCESS Oncology Inc.).

**NSERC Researchers**

Prescient NeuroPharma’s cancer drug, Anhydrovinblastine (AVLB), is based on research conducted by Dr. James Kutney when he was a chemistry professor at the University of British Columbia. NSERC has supported his research through Discovery, Strategic Project, Research Tools and Instruments, and Industrially Oriented Research Grants.
The Pressure Pipe Inspection Company (PPIC) is a privately held company that provides critical information about crucial assets. The company evaluates the condition of water transmission systems utilizing a suite of unique and patented techniques to pinpoint damaged sections of pipe. Water supply system operators use this information to make informed asset management decisions. This often means that they can selectively rehabilitate individual pipe – and avoid the enormous cost of complete pipeline replacement.

PPIC has used a variety of non-destructive testing methods to evaluate approximately 4,000 km worth of water transmission mains.
Improved efficiency of industrial processes is the goal of Process Simulations Ltd. (PSL), a University of British Columbia start-up company. The company’s initial focus has been “black liquor” recovery boilers, a major bottleneck in the kraft paper industry. These boilers burn the organic black liquor by-product of the pulp to generate energy and to recycle the inorganic component into the pulping cycle. Even small improvements in efficiency result in increased production at the mill.

Since its formation, PSL has expanded its modelling to include power boilers and biomass fuel boilers. PSL is also modelling other equipment, e.g., kilns, headboxes, digesters, cement kilns and gasification processes. The company is currently developing a simulator that allows for the visualization, training and optimization of processes.

NSERC has played a key role with PSL in enabling research to be conducted at the University of British Columbia. In turn, the technology that results from this effort quickly moves into industry, enabling PSL to tackle new and novel applications.
QLT Inc.

President: Paul J. Hastings
887 Great Northern Way, Vancouver, British Columbia  V5T 4T5
Tel.: (604) 707-7000  Fax: (604) 707-7001
E-mail: corpcomm@qltinc.com

ANNUAL REVENUE: $182,790,000 (2004)
YEAR INCORPORATED: 1981
STOCK MARKET LISTING: Nasdaq: QLTI  TSX: QLT
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: www.qltinc.com

Products or Services
QLT is a global biopharmaceutical company specializing in developing treatments for cancer, eye diseases, and dermatological and urological conditions. The company has combined its expertise in the discovery, development, commercialization and manufacture of innovative drug therapies with unique technology platforms to create highly successful products such as Visudyne® and Eligard®.

The first bio-pharmaceutical treatment for wet age-related macular degeneration (AMD), Visudyne is one of the most successfully launched ophthalmology products. It has been approved for the treatment of predominantly classic AMD in over 70 countries and has been approved in over 55 countries for the treatment of other eye diseases. Visudyne is marketed through an alliance with Novartis Ophthalmics.

Recently, QLT acquired Atrix Laboratories, Inc., now renamed QLT USA, Inc., part of QLT’s aggressive approach to building its pipeline. This deal adds several commercial products to QLT’s portfolio, including Eligard® for the palliative treatment of advanced prostate cancer. QLT also now has access to the Atrigel® sustained drug delivery platform, a unique technology which is being used with Eligard as well as other products currently in development.

NSERC Researchers
QLT’s focus in photodynamic therapy is founded on the research of Professor Emeritus Julia Levy and chemistry professor David Dolphin, both from the University of British Columbia (UBC). Drs. Dolphin and Levy first obtained an NSERC Strategic Project Grant in the mid-1980s to explore the commercial potential of the drug Benzoporphyrin Derivative (BPD). Dr. Julia Levy has served in several key senior posts at QLT, including chief scientific officer and vice president, as well as president and chief executive officer from 1995 to February 2002 and now serves as executive chairman of QLT’s scientific advisory board. She was appointed an Officer of the Order of Canada in 2001 and, in her honour, the Julia G. Levy Professorship in Ophthalmology Chair was created at the Johns Hopkins Hospital Wilmer Eye Institute in 2004. Throughout her tenure at UBC, Dr. Levy received Strategic Project, Discovery, and Collaborative Research and Development Grants from NSERC.

Dr. David Dolphin holds the NSERC/QLT Industrial Research Chair in Photodynamic Technologies at UBC and is the vice president for technology development at QLT. His research in bio-organic and bio-inorganic chemistry has been supported by NSERC Strategic Project, Discovery, Collaborative Research and Development, and Research Tools and Instruments Grants since 1978. In 2004, Dr. Dolphin received the NSERC Award of Excellence.
Quantic EMC Inc.

President: Dr. Alvin Wexler
191 Lombard Avenue, Suite 1103, Winnipeg, Manitoba  R3B 0X1
Tel.: (204) 942-4000   Fax: (204) 957-1158
E-mail: info@quantic-emc.com

Products or Services
Quantic EMC has an impressive client list, including Johnson Controls, Siemens, Boeing, Cisco and Apple Microsystems. These companies come to Quantic for its simulation software for high-speed electronics systems. The software simulates system conditions under high-speed switching conditions. It predicts faults within the systems that need to be diagnosed and corrected when designing digital circuits. It also identifies electromagnetic emissions from equipment (the reason passengers are asked to turn off their laptop computers upon aircraft takeoff and landing). The bottom line? A substantial reduction in the time and money spent on prototypes and a reduction of time to market, particularly in light of international emission standards. Quantic’s principal product is Omega PLUS, soon to be called Compliance®.

NSERC Researchers
The founder and president of Quantic EMC is Dr. Alvin Wexler, a Professor Emeritus in the Department of Electrical Engineering at the University of Manitoba. Dr. Wexler has received significant funding through NSERC Discovery, and Research Tools and Instruments Grants. His current research on impedance computer tomography has potential applications ranging from locating buried land mines, to monitoring the containment of nuclear wastes, to identifying subterranean contamination, to imaging within the human body. Dr. Wexler also holds international patents on Electroscan, an electrical impedance tomography (EIT) device. The EIT algorithm, which he and his students developed, is frequently referred to as the Wexler Algorithm.
Semiconductor manufacturers have long measured their components in nanometres (a nanometre is one-millionth of a millimetre). Their goal, set by the International Technology Roadmap for Semiconductors, is to produce next-generation semiconductors smaller than 100 nanometres, a feat that will increase their performance and reduce manufacturing costs.

Technology, however, has reached the limits of miniaturization. Quantiscript, the first nanotechnology company launched in Quebec, aims to solve this problem with nanolithography. This process imprints patterns directly onto an integrated circuit made out of semiconductor material (namely silicon and germanium), and improves patterning of lithography masks with the help of an electron beam.

Quantiscript was created to commercialize the nanolithography technology developed by Dr. Jacques Beauvais and his students, Drs. Dominique Drouin and Éric Lavallée. Dr. Beauvais, Quantiscript’s Vice-president, Technology, is a professor in the Department of Electrical and Computer Engineering and the director of the Centre de recherche en nanofabrication et nanocaractérisation [centre for research in nano-manufacturing and nano-characterization] at the Université de Sherbrooke. Dr. Beauvais’s work in nanolithography was supported by an NSERC Discovery Grant and by Micronet, a Network of Centres of Excellence. Quantiscript’s vice-president, Operations, Dominique Drouin, is an associate professor in the Department of Electrical and Computer Engineering at the Université de Sherbrooke. Dr. Drouin, a microscopy expert, received an NSERC University Undergraduate Student Research Award.

Quantiscript Inc.

President and Chief Executive Officer: Claude Brisson
2500,Université Boulevard, Sherbrooke, Quebec J1K 2R1
Tel.: (819) 821-7910 Fax: (819) 821-7937
E-mail: quantiscript@quantiscript.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 12
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.quantiscript.com

Products or Services
Semiconductor manufacturers have long measured their components in nanometres (a nanometre is one-millionth of a millimetre). Their goal, set by the International Technology Roadmap for Semiconductors, is to produce next-generation semiconductors smaller than 100 nanometres, a feat that will increase their performance and reduce manufacturing costs.

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NSERC Researchers
Quantiscript was created to commercialize the nanolithography technology developed by Dr. Jacques Beauvais and his students, Drs. Dominique Drouin and Éric Lavallée. Dr. Beauvais, Quantiscript’s Vice-president, Technology, is a professor in the Department of Electrical and Computer Engineering and the director of the Centre de recherche en nanofabrication et nanocaractérisation [centre for research in nano-manufacturing and nano-characterization] at the Université de Sherbrooke. Dr. Beauvais’s work in nanolithography was supported by an NSERC Discovery Grant and by Micronet, a Network of Centres of Excellence. Quanti- script’s vice-president, Operations, Dominique Drouin, is an associate professor in the Department of Electrical and Computer Engineering at the Université de Sherbrooke. Dr. Drouin, a microscopy expert, received an NSERC University Undergraduate Student Research Award.
Quantum Technology Corporation

Chief Executive Officer: Dr. Calvin Winter
BC Research and Innovation Complex, 3650 Wesbrook Mall
Vancouver, British Columbia  V6S 2L2
Tel.: (604) 222-5539   Fax: (604) 677-5826
E-mail: sales@quantum-technology.com

ANNUAL REVENUE: $1,000,000
NUMBER OF EMPLOYEES IN CANADA: 6
YEAR INCORPORATED: 1981
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.quantum-technology.com

Products or Services
This privately held company specializes in high-technology refrigeration equipment that produces temperatures ranging from –196°C (nitrogen and air liquefiers) to –269°C (helium liquefiers) and below (dilution refrigerators to –272.9°C). These products are sold worldwide with excellent market acceptance in Canada, Europe and the Middle East. The low-temperature scientific equipment is used for recycling helium and maintaining superconducting magnets at operating temperature in medical magnetic resonance imaging systems and many other research applications.

NSERC Researchers
Quantum Technology was co-founded by Simon Fraser University physics graduate students Dr. Calvin Winter and Ken Myrtle who worked with the guidance and expert assistance of professor Suso Gygax. Dr. Gygax, a Professor Emeritus in the Department of Physics at Simon Fraser, has received NSERC Discovery, and Research Tools and Instruments Grants for work on low-temperature, solid-state physics and superconductivity. The initial proof of concept research on cryogenic refrigeration systems, developed by Quantum Technology, was supported by NSERC. Dr. Calvin Winter received NSERC Postgraduate Scholarships during his graduate studies at Princeton, McGill and Simon Fraser universities. Dr. Winter also received an NSERC Postdoctoral Fellowship to work with professor Gygax.
Recent advances in sensor technology have made it possible to monitor atmospheric gases and biological processes with an accuracy and affordability that were inconceivable only a few years ago. Qubit Systems has incorporated these technologies into a range of high-quality, integrated products for teaching and research in the biological sciences.

The educational arm of Qubit Systems concentrates on giving undergraduate students much needed hands-on experience in collecting and manipulating experimental data. A Qubit Systems educational laboratory package includes everything the students need to conduct experiments to illustrate important biological principles, or for self-directed original research. These packages are currently in use in over 500 educational institutions in more than 50 countries.

The research arm of Qubit Systems concentrates on pushing the limits of gas detection technology. Current research products include a differential oxygen analyzer that offers five times the sensitivity of competing analyzers, and convenient gas analysis benches for CO₂ and O₂ analysis.

Qubit Systems Inc.

President and Chief Executive Officer: Dr. Stephen Hunt
4000 Bath Road, 2nd Floor, Kingston, Ontario K7M 4Y4
Tel.: (613) 384-1977 Fax: (613) 384-9118
E-mail: info@qubitsystems.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 7
YEAR INCORPORATED: 1995
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.qubitsystems.com

NSERC Researchers

Qubit Systems was founded by Dr. David B. Layzell, a professor of biology at Queen’s University, in partnership with two researchers working in his laboratory, Stephen Hunt and Nicholas Dowling. The company was set up to commercialize some of the novel technologies they had developed for research and teaching in the biological and environmental sciences. Dr. Layzell is a plant physiologist specializing in nitrogen fixation; recently he has focused his research on biosphere solutions to climate change. A former NSERC Steacie Fellow, Dr. Layzell founded and now serves as chief executive officer and research director of the BIOCAP Canada Foundation, a national, not-for-profit research foundation that encourages research into the use of biological systems to reduce and sequester greenhouse gases and complement fossil energy sources by building strategic research partnerships across the natural and social sciences, industry and government. Since 2002, NSERC has partnered with BIOCAP to co-fund a national research network (Fluxnet Canada) and 17 projects under the NSERC Strategic Project Grants Program. Dr. Layzell’s own research program receives support through NSERC Discovery, and Research Tools and Instruments Grants.
Random Knowledge Inc.

President and Chief Technology Officer: Dr. Michael Kouritzin
10932 73rd Avenue, Edmonton, Alberta   T6G 0C2
Tel.: (780) 428-9218   Fax: (780) 665-7013
E-mail: info@randomknowledge.net

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 7
YEAR INCORPORATED: 2003
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services
WEB SITE: www.randomknowledge.net

Products or Services
Random Knowledge has created an innovative platform that provides customers with the leading-edge solution to information problems, such as determining if someone is stealing information from their computer; issuing fraudulent credit card or health care claims without their permission; identifying the demographics of individuals watching television; or whether an e-mail is spam.

The company’s platform technology can provide mathematically optimal historical, present and future estimates based on patented statistical algorithms. The technology is currently being used for network security, fraud detection and targeted advertising applications.

NSERC Researchers
Dr. Michael Kouritzin is the co-founder, president and chief technology officer at Random Knowledge. He is also a professor of mathematics at the University of Alberta, the project leader of the Prediction in Interacting Systems Centre and a researcher at the Mathematics of Information Technology and Complex Systems (MITACS), a Network of Centres of Excellence. Dr. Kouritzin has been working in both theoretical and applied aspects of non-linear filtering for the past seven years and has introduced novel state-of-the-art methods and algorithms. His mathematical contributions are internationally recognized and he was awarded the 2001 Pacific Institute for the Mathematical Sciences Industrial Outreach Prize. NSERC and MITACS contributed to the intellectual property that led to the formation of Random Knowledge and FastTrack Technologies, another company co-founded by Dr. Kouritzin. NSERC has funded his research with a Postgraduate Scholarship, Postdoctoral Fellowships and Discovery Grants.
Raylo Chemicals evolved from R & L Molecular Research, founded by Ray and Leo Lemieux. The late Dr. Ray Lemieux, who was actively involved with the company from 1966 to 1975, was a professor in the Department of Chemistry at the University of Alberta. One of NRC/NSERC’s top-funded researchers, his blood antigen work inspired worldwide investigations in immunology, cancer and AIDS research. In 1991, NSERC awarded Dr. Lemieux the first Canada Gold Medal for Science and Engineering, acknowledging his outstanding contributions to Canadian research. In 1994, he was named a Companion of the Order of Canada and in 2004 Dr. Lemieux was inducted posthumously into the Canadian Science and Engineering Hall of Fame.
SatCon Power Systems Canada Ltd.

General Manager: Tony Galbraith
835 Harrington Court, Burlington, Ontario  L7N 3P3
Tel.: (905) 639-4692  Fax: (905) 639-0961
E-mail: Not listed

**Products or Services**
SatCon Power Systems Canada is a high-technology company that designs, manufactures and services electronic power conversion and control systems. SatCon's primary activity is manufacturing products for large industrial power users and electrical utilities, as well as for a number of emerging niche markets. SatCon's products enable end users to optimize performance in a broad range of industrial applications and enhance quality and productivity in the end users' process.

SatCon has a first-rate team of electronic and software engineers, and has developed and proven several important new products that make it the technology leader in its target markets. SatCon's Power Conditioning Systems use advanced digital controls designed for alternative energy applications, including fuel cells, photovoltaic arrays (solar), microturbines and wind turbines. The Power Conditioning Systems are also designed to combine alternative energy generators with advanced energy storage devices such as advanced batteries and flywheels to provide an uninterruptible power supply (UPS).

**NSERC Researchers**
Dr. Shashi B. Dewan, the founder of Inverpower Controls (now known as SatCon Power Systems Canada), is an internationally recognized authority in the field of power electronic technology. Dr. Dewan is no longer involved with SatCon Power Systems Canada, but continues his research program with the Power Devices and Systems Research Group in the Department of Electrical and Computer Engineering at the University of Toronto. Dr. Dewan is researching power electronics and controls, concentrating on the problem of eliminating harmonics that distort signals within the power conversion process. His research has been consistently supported by NSERC Discovery, Collaborative Research and Development, Strategic Project, and Research Tools and Instruments Grants since 1979.
Satlantic has been in operation since 1990, supplying world-class oceanographic sensors and systems that are second to none in precision and reliability. Over the years, the company’s customers have counted on Satlantic instrumentation for meeting the demanding requirements of scientific research, calibration of satellites and evaluation of the ocean environment.

By working with research scientists from private and public laboratories around the world, Satlantic has been able to develop and deliver some of the most advanced equipment possible for oceanographic applications. Its reputation for unsurpassed innovation, outstanding product quality and high level of customer support has positioned the company as a leader in the ocean sciences industry. It has a long track record of successful commercialization of science and continues to aggressively explore new technologies and applications where its expertise can provide new capability and increased value to its customers.

Satlantic has significant capacity and capabilities to provide custom optical and data collection solutions, routine monitoring and assessment for coastal and harbour monitoring solutions, and remote sensing services for satellite image analysis, data dissemination, collection and retrieval.

The company’s team is made up of some of the best scientists, engineers and technologists in the field, attracted to Satlantic’s commitment to excellence. Its professional engineers have built their careers designing and building sensitive, durable, reliable aquatic and oceanographic research equipment.

NSERC Researchers
Dr. Marlon Lewis created Satlantic in 1990 with a line of advanced optical systems designed and prototyped at Dalhousie University. Dr. Lewis serves as the company’s chief executive officer and chief scientist. He is also a professor of oceanography at Dalhousie University where he is examining optical variability in the ocean. NSERC supports his research through Collaborative Research and Development, Strategic Project, and Discovery Grants.
SED Systems –

division of CALIAN Ltd.

President: Brent McConnell
18 Innovation Boulevard, PO Box 1464, Saskatoon, Saskatchewan S7K 3P7
Tel.: (306) 931-3425 Fax: (306) 933-1486
E-mail: marketing@sedsystems.ca

Products or Services
SED Systems provides systems and services to the international communications industry. SED is a turnkey supplier, working with customers to tailor systems to their operational requirements. The company designs, builds, installs and tests the system, assists in developing operating scenarios and procedures, provides expert support to system commissioning and service rollout, and offers long-term maintenance support. Products include satellite gateways, feeder link stations, telemetry, tracking and command stations, network management systems, in-orbit test systems, carrier monitoring systems, and communications equipment. SED also provides low-volume, high-quality custom manufacturing services to telecommunications, defence and aviation markets in North America.

SED now employs 225 people and serves satellite manufacturers, operators and service providers around the world. In 1990, SED became a wholly owned subsidiary of CALIAN Technology Ltd., and in 2000 became a division of CALIAN Ltd.

NSERC Researchers
SED Systems began in 1965 as the Space Engineering Division of the University of Saskatchewan’s Department of Upper Atmospheric Physics. Following the team’s pioneering research, headed by the late Dr. Balfour Currie, SED designed and constructed rocket instrumentation for upper atmospheric studies. The late Dr. Alex Kavadas, also an active researcher in the division, led SED to incorporation in 1972 and served as the company’s first president. In the 1960s, Drs. Kavadas and Currie received NRC funding for their space-related research.

NUMBER OF EMPLOYEES IN CANADA: 225
YEAR INCORPORATED: 1972
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Telecommunications
WEB SITE: www.sedsystems.ca
Products or Services

Calgary-based SemBioSys Genetics is a biotechnology company focused on the development, commercialization and production of protein-based pharmaceuticals and non-pharmaceutical products based on its plant genetic engineering skills and proprietary oilbody-oleosin technology platform – the Stratosome™ Biologics System. The company’s two lead pharmaceutical products are insulin and a developmental cardiovascular drug called Apo AI. The company also has a series of non-pharmaceutical products addressing animal health, industrial and human topical markets.

SemBioSys currently has five major funded partnership agreements with Syngenta Participations AG, Martek Biosciences Corporation, Lonza, Inc., Dow AgroSciences LLC and Arcadia BioSciences, Inc.

NSERC Researchers

SemBioSys Genetics was formed by Dr. Maurice Moloney, the company’s chief scientific officer, to commercialize his research at the University of Calgary’s Department of Biological Sciences. Specializing in plant physiology and cell biology, Dr. Moloney held an NSERC Industrial Research Chair in Plant Biotechnology. His research has been supported by Discovery, Strategic Project, Collaborative Research and Development, and Research Tools and Instruments Grants.
Service d’Expertise en Matériaux (S.E.M.) Inc.

President: Jacques Marchand
1400 Boulevard du Parc-Technologique, Québec, Quebec  G1P 4R7
Tel.: (418) 656-1003  Fax: (418) 656-6083
E-mail: seminc@sem.qc.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 10
YEAR INCORPORATED: 1989
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Engineering and Scientific Services
WEB SITE: www.sem.qc.ca

Products or Services
Service d’Expertise en Matériaux (S.E.M.) is a consulting firm that specializes in concrete technology. It offers leading-edge expertise in planning repairs to deteriorated concrete structures, optimization and design of all types of concrete mixes, modeling of chemical and physical concrete deterioration processes, projection of the life-span of concrete structures, technical management and support in disputes and legal claims, and development and execution of specialized standard and non-standard testing. S.E.M.’s staff is made up of experts in civil, physical and materials engineering, most of whom hold a master’s degree.

S.E.M. also has a subsidiary, SIMCO Technologies, which specializes in the development of software for estimating the lifespan of concrete structures. The unique state-of-the-art technology developed by SIMCO Technologies makes it possible to determine the causes of the deterioration of existing structures and predict the short- and long-term behaviour and lifespan of civil engineering structures.

NSERC Researchers
Service d’Expertise en Matériaux (S.E.M.) was founded in 1989 by Jacques Marchand and Michel Pigeon. Dr. Marchand is president of S.E.M. and its subsidiary, SIMCO Technologies, and a professor in the Department of Civil Engineering at Université Laval. He holds the Canada Research Chair on Predicting the Useful Life of Concrete Infrastructures. He is also the senior researcher and director of the CRIB [concrete infrastructures research centre], which comprises almost 200 researchers, research professionals and graduate students from six Quebec universities. His expertise, particularly in the area of the chemical deterioration of concrete, is recognized the world over. He is active in many international scientific organizations and is regularly asked by research groups, universities, businesses and industrial groups to present his research findings. He was appointed technical expert for the coroner in the public inquiry into the du Souvenir Boulevard bridge in Laval, Quebec, and has served as an expert witness in many construction disputes in California. He was brought in as an expert to estimate the amount of deterioration and life expectancy of a building adjacent to the World Trade Center in New York. NSERC has supported his research with Discovery, Research Tools and Instruments, Strategic Project, and Cooperative Research and Development Grants. In 2005, NSERC awarded Dr. Marchand an E.W.R. Steacie Memorial Fellowship.
Sigma Analysis & Management Ltd.

President and Chief Executive Officer: Dr. Luis Seco
222 College Street, Toronto, Ontario M5T 3J1
Tel.: (416) 348-9710, ext. 3040 Fax: (416) 348-9704
E-mail: info@sigmanalysis.com

**Products or Services**
Sigma Analysis & Management is an innovative alternative investment management firm that combines a unique blend of math and market analysis. Its cutting-edge portfolio theory and financial mathematics provide investment solutions with consistent returns in all possible market situations. Sigma distinguishes itself by teaching clients the science behind investment decisions.

Sigma stems from a partnership called Risklab – a joint venture between the University of Toronto’s Fields Institute for Research in Mathematical Sciences, and Algorithmics. The commercial success of this research results from an ability to group hedge funds – high-return, high-risk assets – into low-risk portfolios. Using mathematical models, funds are pitted against one another in a manner that offsets financial volatility. The end result is a group of 15 to 30 hedge funds worth approximately $50 million that generate income despite changes in the economy.

Financial stability attracts medium- and large-sized companies to Sigma’s reliable quantitative investment techniques. One of Canada’s largest pension plans, a chemical company and private investors all benefit from Sigma’s services.

In addition to acquiring a solid client roster from the financial sector, Sigma has tailored its services to the power industry. The company assists energy consumers in electricity risk assessment and management.

**NSERC Researchers**
Dr. Luis Seco, a leading expert in financial risk management, is the president and chief executive officer of Sigma Analysis & Management. He is also a professor of mathematics and director of Risklab at the University of Toronto. Dr. Seco has been instrumental in developing an international network of Risklabs with sites in the United States, England, Spain, Germany and Cyprus. Dr. Seco’s research has been supported by NSERC Discovery, and Research Tools and Instruments Grants.
SIMCO Technologies Inc.

President: Jacques Marchand
1400 Boulevard du Parc-Technologique, Suite 203, Québec, Quebec  G1P 4R7
Tel.: (418) 656-0266   Fax: (418) 656-6083
E-mail: info@simcotechnologies.com

**Products or Services**
SIMCO Technologies, a subsidiary of Service d’Expertise en Matériaux (S.E.M.), specializes in research and development related to digital models for predicting the short- and long-term behaviour of civil engineering structures. STADIUM®, the software developed by SIMCO Technologies, is used primarily to study problems related to the durability of concrete structures. The resulting model can be used to determine the causes of the deterioration of a concrete structure exposed to chemically hostile environments and, if necessary, predict the remaining lifespan of the structure. The models developed by SIMCO Technologies have been used in many insurance claims and other disputes in the United States and Canada. SIMCO Technologies’ staff includes experts in civil, physical and materials engineering, mathematics and programming, most of whom hold a master’s degree or doctorate.

**NSERC Researchers**
SIMCO Technologies was founded in 1989 by Élisabeth Reid and Jacques Marchand. Dr. Marchand is president of SIMCO Technologies and its parent company, Service d’Expertise en Matériaux (S.E.M.), and a professor in the Department of Civil Engineering at Université Laval. He holds the Canada Research Chair on Predicting the Useful Life of Concrete Infrastructures. He is also the senior researcher and director of the CRIB [concrete infrastructures research centre], which comprises almost 200 researchers, research professionals and graduate students from six Quebec universities. His expertise, particularly in the area of the chemical deterioration of concrete, is recognized worldwide. He is active in many international scientific organizations and is regularly asked by research groups, universities, businesses and industrial groups to present his research findings. He was appointed technical expert for the coroner in the public inquiry into the du Souvenir Boulevard bridge in Laval, Quebec, and has served as an expert witness in many construction disputes in California. He was brought in as an expert to estimate the amount of deterioration and life expectancy of a building adjacent to the World Trade Center in New York. NSERC has supported his research with Discovery, Research Tools and Instruments, Strategic Project, and Cooperative Research and Development Grants. In 2005, NSERC awarded Dr. Marchand an E.W.R. Steacie Memorial Fellowship.
Simulent Inc.

Chairman: Dr. Javad Mostaghimi
203 College Street, Suite 302, Toronto, Ontario M5T 1P9
Tel.: (416) 979-5544  Fax: (416) 979-5519
E-mail: ask@simulent.com

**Products or Services**

Simulent provides engineering solutions for fluid and thermal systems. The company’s Computational Fluid Dynamics (CFD) software provides 3D simulations of a wide variety of fluid flows, heat transfer and phase changes. Simulent’s CFD products are capable of simulating three-dimensional free surface flows with large surface deformation, surface merging and surface breaking.

Simulent’s CFD software can be applied to sprays and multiphase flows, materials processing, combustion and pollution assessments, thermal plasma technologies, inkjet printing, and environmental technologies.

**NSERC Researchers**

Dr. Javad Mostaghimi is a mechanical and industrial engineering professor at the University of Toronto and director of the Centre for Advanced Coating Technologies at the same university. He is also the vice-dean of research and graduate studies and holds a Canada Research Chair in Advanced Coatings. Dr. Mostaghimi is a leader in the fields of thermal spray and plasma processing. NSERC Discovery, Collaborative Research and Development, and Research Tools and Instruments Grants helped develop the CFD software commercialized by Simulent.
SiXtron Advanced Materials Inc.

President and Chief Executive Officer: Dr. Pierre Myrand
2100 King Street West, Suite M-70, Sherbrooke, Quebec J1J 2E8
Tel.: (514) 995-7368 Fax: (819) 982-2264
E-mail: info@sixtron.com

**ANNUAL REVENUE:** Confidential
**NUMBER OF EMPLOYEES IN CANADA:** 4
**YEAR INCORPORATED:** 2003
**STOCK MARKET LISTING:** Not listed
**INDUSTRIAL SECTOR:** Computer, Electronic and Electrical Equipment
**WEB SITE:** www.sixtron.com

### Products or Services

SiXtron Advanced Materials is a leading-edge developer of nanocrystalline thin films used mainly by the semiconductor and electronic devices industries, as well as by the electronics and industrial coating industries.

The company has developed a unique process for producing a portfolio of silicon-based thin film materials. SiXtron’s lead material is nanocrystalline silicon carbide (n-SiC).

By means of the company’s proprietary patent pending Polymer-Source Chemical Vapour Deposition (PS-CVD) technology, SiXtron deposits semiconductor or ceramic thin films on various substrates for applications in high performance electronic devices, optoelectronic devices, solar cells and numerous coating applications. SiXtron’s proprietary technology combines the availability of affordable, high-density, solid polymeric sources currently used for the industrial synthesis of bulk silicon carbide in the manufacturing of automotive parts, fibres, and ceramic infusion, for example, with the high quality of the thin films deposited from single-source gaseous precursors via classic CVD processes. SiXtron’s PS-CVD process offers simultaneously high deposition rates and superior material properties. The company’s ceramic thin films are very well suited for a variety of coating applications.

### NSERC Researchers

SiXtron Advanced Materials was founded by Drs. Mihai Scarlete and Cétin Aktik to further a new material they created, a silicon carbide thin film synthesized from the gaseous precursors with the highest density identified to date, *in situ* produced from a solid inorganic polymer. Dr. Scarlete, SiXtron’s vice-president of research, is the lead scientist behind the company’s leading-edge and disruptive deposition process. He is also a professor of physical chemistry at Bishop’s University. NSERC has supported his research with Discovery Grants. Dr. Cétin Aktik is SiXtron’s vice-president of development and an electrical engineering professor at the Université de Sherbrooke. His research has been supported by NSERC Discovery, Research Tools and Instruments, Collaborative Research and Development, and Infrastructure Grants.
Smart Camera Technologies Inc.

Chief Technology Officer: Dr. Wael Badawy
3535 Research Road NW, Unit 5, Calgary, Alberta T2L 2K8
Tel.: (403) 210-8903 Fax: (403) 210-8104
E-mail: badawy@smartcamera.ca

Products or Services
Smart Camera Technologies has developed a low-cost technology that uses multiple cameras and infrared sensors to track and code people, vehicles or other moving objects. The company has built its first prototype for the transportation sector and is now finalizing development on a second prototype to be used in healthcare.

The company’s system uses several intelligent cameras that can be linked over a wireless and wireline network to collect, interpret and transmit data, such as trajectory and speed, in real time. The technology condenses the video information so multiple video streams can be sent over low-bandwidth wireless networks, thus offering a low-cost alternative to other smart camera systems. The company’s cameras also do not need to be recalibrated for each different angle or if they are moved by severe weather.

NSERC Researchers
Dr. Wael Badawy founded Smart Camera Technologies to further the development of the intelligent camera system he created. He is the company’s chief technology officer, an associate professor in the Department of Electrical and Computer Engineering at the University of Calgary and an adjunct professor in the Department of Mechanical Engineering at the University of Alberta. Dr. Badawy’s research interests are in the areas of VLSI architectures for video applications with low-bit rate applications. Funding for the research that led to the development of Smart Camera Technologies was provided in part by Micronet, a Network of Centres of Excellence, the Canada Foundation for Innovation, Alberta Science and Research Authority, and NSERC Discovery, Research Tools and Instruments, and Technology Partnerships Grants.

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 2003
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.smartcamera.ca

Smart Camera Technologies Inc.
Chief Technology Officer: Dr. Wael Badawy
3535 Research Road NW, Unit 5, Calgary, Alberta T2L 2K8
Tel.: (403) 210-8903 Fax: (403) 210-8104
E-mail: badawy@smartcamera.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 2003
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.smartcamera.ca

RESEARCH MEANS BUSINESS

Smart Camera Technologies Inc.

Chief Technology Officer: Dr. Wael Badawy
3535 Research Road NW, Unit 5, Calgary, Alberta T2L 2K8
Tel.: (403) 210-8903 Fax: (403) 210-8104
E-mail: badawy@smartcamera.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 2003
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.smartcamera.ca

RESEARCH MEANS BUSINESS
-products or services-
Stantec is a knowledge company that provides solutions to infrastructure and facilities projects through value-added professional services and technologies.

One of Stantec’s areas of expertise is in infrastructure management systems, where the company has a significant level of proprietary technology. This proprietary technology had its genesis some 20 years ago in the research carried out by some of the company’s principals and employees who specialized in pavement engineering, road strength evaluation, driveability and surface condition.

The pavement analysis system predicts which sections of road are most likely to deteriorate so that cost-effective maintenance and repairs can be targeted to fix those sections before serious problems arise and more costly repairs are needed. This management system is supported and enhanced by a specialist pavement research group that is involved in state-of-the-art research to better understand and improve pavements.

Recognizing a growing need for complete infrastructure management services for potable water, sanitary, storm water, bridges, roads, right-of-way features, natural gas, etc., Stantec subsequently added other modules to complement the original pavement management system.

-nserc researchers-
Stantec’s original pavement management application is a spin-off of research done at the University of Waterloo. Stantec’s vice-president responsible for infrastructure management systems, Dr. Matt Karan, and vice-president Dr. Frank Meyer did their doctoral theses under Dr. Ralph Haas, Distinguished Professor Emeritus in the Department of Civil engineering at the University of Waterloo. Dr. Haas is an expert in transportation engineering and planning, and was named a Member of the Order of Canada in 1999. He pioneered the systems concept and the development of engineering technology for managing networks of paved roads. His concept is now used by municipal, provincial, state and federal government transportation agencies in North America and abroad. Dr. Haas has received numerous NSERC Discovery, and Strategic Project Grants for his work on pavement management systems. University of Waterloo graduates make up a quarter of the staff working on Stantec’s infrastructure management applications.
Sybase Canada

President: Terry Stepien
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Tel.: (519) 886-3700 Fax: (519) 747-4971
E-mail: investor_relations@sybase.com

- **ANNUAL REVENUE:** Confidential
- **NUMBER OF EMPLOYEES IN CANADA:** 115
- **YEAR INCORPORATED:** 1984
- **STOCK MARKET LISTING:** Not listed
- **INDUSTRIAL SECTOR:** Software and Computer Services
- **WEB SITE:** www.sybase.com

**Products or Services**

One of Sybase Canada’s subsidiaries was formerly known as WATCOM International Corporation, a start-up from the University of Waterloo. In 1994, WATCOM merged with Powersoft Corp, which subsequently combined in 1995 with California-based Sybase, Inc., one of the largest global independent software companies. Employees from Sybase’s two subsidiaries, iAnywhere Solutions Inc. and Financial Fusion Inc., share the Sybase Waterloo facility, which employs 270 people and continues to be a hotbed of technological innovation.

Celebrating 20 years of innovation, Sybase enables the Unwired Enterprise for customers and partners by delivering enterprise and mobile software solutions for information management, development and integration. The world’s most critical data in commerce, communications, finance, government and healthcare runs on Sybase.

**NSERC Researchers**

Members of the University of Waterloo’s Computer Systems Group, headed by Dr. Wes Graham, established WATCOM, a predecessor of Sybase Canada. The group’s expertise enabled the WATCOM team to produce innovative software for the education market. Many faculty of the Computer Systems Group, including Dr. Graham and Dr. Donald Cowan, now a Professor Emeritus in the Department of Computer Science, received NSERC support through Discovery Grants.

Terry Stepien, the president of iAnywhere Solutions and Sybase Canada, was also a member of the University of Waterloo’s Computer Systems Group, where he held an adjunct faculty appointment in the Department of Computer Science.
SynGene Biotek Inc.

President: Dr. Santosh Misra
PO Box 3075, R-Hut, McKenzie Avenue, Victoria, British Columbia   V8W 3W2
Tel.: (250) 721-8928   Fax: (250) 477-3995
E-mail: smisra@uvic.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 8
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Pharmaceuticals/Biotechnology
WEB SITE: Not listed

Products or Services
SynGene Biotek is an international leader in the creation of broad-spectrum disease-resistant plants. The company’s pioneering biotechnology is environmentally friendly and helps produce safer, more sustainable foods.

SynGene’s work is based on the development of proprietary protectin technology. Recently discovered, protectins are a class of powerful and natural antimicrobial agents occurring widely in nature as part of what is called “innate immunity.” SynGene has developed methods for structurally altering and expressing selected protectins in plants in order to produce a variety of disease-resistant prototypes. This resilient bio-genetic innovation can be adopted into floricultural, horticultural, animal-feed, and human antibiotics. Applications for this technology include golf courses free of pesticides, safer toxin-reduced food, and molecular farming for disease prevention.

SynGene’s plant technology was perfected in potatoes and is transferable to other produce, such as wheat, corn and soya beans. The company’s ability to improve the quantity and quality of crops without the use of pesticides will benefit global health.

In 2003, SynGene established a subsidiary company in Saskatoon, Saskatchewan.

NSERC Researchers
Dr. Santosh Misra is an expert in genetic engineering and plant biochemistry and established SynGene Biotek to commercialize her successful gene modification technology. Dr. Misra is a professor in the Department of Biochemistry and Microbiology at the University of Victoria and serves as the company’s president. Her current research involves the molecular genetics of conifers and genetic engineering of crops. Dr. Misra is a member of the Canadian Bacterial Diseases Network and the Advanced Food Materials Network, which are both Networks of Centres of Excellence. She has received NSERC Strategic Project, Discovery, and Research Tools and Instruments Grants.
Products or Services
Syscor Research & Development specializes in the development of embedded hardware/software systems and distributed software applications. The company’s expertise lies in digital and analog electronics, network communications, real-time systems, industrial controls and system integration.

NSERC Researchers
Syscor Research & Development was founded by Drs. Yury Stepanenko, Pei-Chong Tang and Dale Shpak, and two former graduate students, Nick Tzonev and David Sime. Dr. Shpak serves as Syscor’s president and is also an adjunct professor in the Department of Electrical and Computer Engineering at the University of Victoria. His research interests lie in the design and implementation of communications and digital signal processing systems for which he has received several NSERC Discovery Grants. Dr. Yury Stepanenko is an Professor Emeritus of mechanical engineering and was an ASI fellow at the University of Victoria. He develops theory and applied methods for adaptive and optimal control of nonlinear systems and the development of high-precision actuators and sensors which can be applied to precise robotics, medical instrumentation and adaptive optics. NSERC has supported this research with Discovery and Strategic Project Grants.
Techné Knowledge Systems focuses on legacy software transformation and modernization to help organizations solve business problems.

Techné has developed its flagship offering, JConvert/PB – a complete solution to legacy modernization. By using JConvert/PB, clients preserve the intellectual capital invested in their legacy PowerBuilder™ applications, transforming them into equivalent Java applications with minimal risk and guaranteed results.

The company’s list of clients includes Royal Bank of Canada, Workplace Safety and Insurance Board of Ontario, Weldwood, IBM Canada, IBM Denmark, Toronto Transit Commission and many others.

NSERC Researchers
Techné Knowledge Systems was founded by Martin Stanley, the company’s president, Bryan Kramer, Techné’s chief technology officer, and Dr. John Mylopoulos, computer science professor at the University of Toronto. Dr. Mylopoulos’ research interests include information modeling techniques, knowledge based systems, and information system design. His work has been supported by NSERC Discovery, Cooperative Activities, and Collaborative Research and Development Grants.
Tekna Systèmes Plasma Inc.

President and Chief Executive Officer: Maher Boulos
2935 Industriel Boulevard, Sherbrooke, Quebec J1L 2T9
Tel.: (819) 820-2204 Fax: (819) 820-1502
E-mail: tekna@tekna.com

Annual Revenue: Confidential
Number of Employees in Canada: 41
Year Incorporated: 1990
Stock Market Listing: Not listed
Industrial Sector: Chemical Products and Materials
Web Site: www.tekna.com

Products or Services
Tekna Systèmes Plasma is a spin-off from the Université de Sherbrooke whose mission is to ensure technology transfer from the university laboratory to the industrial sector. Tekna specializes in thermal plasmas and their use in synthesizing and processing materials with high added value. Industrial applications of the technology include spheroidization, powder densification and purification, metal and ceramic nanometric powder synthesis, and plasma spray coating. These processes have many applications in the manufacture of electronic materials, e.g., for targets of thin CVD coating processes, and the manufacture of MLCCs and other electronic components. Plasma-synthesized nanopowders have many other uses, ranging from UV protection (sun screen) to energy and aerospace applications. Through its specialized services and excellent infrastructure, Tekna enables industry the world over to carry out small-scale production at its own demonstration facilities at power rates of up to 400 kW and with a production capacity of 10 to 100 kg per hour. Tekna also provides turn-key facilities for both R&D work in the sector and high-volume production. In the 14 years since it was founded, Tekna has established itself as a world leader, renowned for the fine quality of its induction plasma technology. The company sells its products and services and owns industrial production facilities in North America, Europe and Asia.

NSERC Researchers
Maher Boulos founded Tekna Systèmes Plasma to market the results of research carried out at the Plasma Technology Research Centre (CRTP) of the Université de Sherbrooke’s Department of Chemical Engineering. Mr. Boulos continues to do research in thermal plasma technology with support from NSERC in the form of a Discovery Grant and from the Fonds québécois de la recherche sur la nature et les technologies [Quebec natural and technological research foundation] and under contracts with various companies worldwide. Over a 32-year university career, Maher Boulos supervised or co-supervised the research of 51 master’s and doctoral students. He has published more than 150 articles in refereed scientific journals and made more than 300 presentations at international scientific conferences. He has 16 patents or patent applications to his credit, many of which are used in industry. He co-authored a reference book on thermal plasmas that outlines the basic concepts of thermal plasmas and their applications.
Thermo Dynamics Ltd.

Chief Executive Officer: Dr. Peter Allen
101 Frazee Avenue, Dartmouth, Nova Scotia   B3B 1Z4
Tel.: (902) 468-1001   Fax: (902) 468-1002
E-mail: solarinfo@thermo-dynamics.com

ANNUAL REVENUE: $800,000
NUMBER OF EMPLOYEES IN CANADA: 7
YEAR INCORPORATED: 1981
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Engineering and Scientific Services
WEB SITE: www.thermo-dynamics.com

Products or Services
Thermo Dynamics is a leader in solar technology. The company sells solar-powered heaters in North America, Europe, Africa and New Zealand. The heaters reduce domestic water heating costs by as much as 65 per cent. The system is non-polluting and uses only non-toxic heat transfer solutions in its design. Novel features of the Thermo Dynamics solar water heater include a high-performance natural convection heat exchanger, photovoltaic power pump and metallurgically bonded aluminum-copper solar absorber fins.

NSERC Researchers
Thermo Dynamics’ founder is Dr. Peter Allen, a mechanical engineering professor at Dalhousie University. Dr. Allen has worked in the solar-energy industry for more than 15 years and is a world leader in solar technology. He has received several NSERC Discovery Grants. His current research is in thermal and hydraulic performance of heat exchangers, and solar thermal energy utilization.
TIR Systems Ltd.

President and Chief Executive Officer: Leonard Hordyk
7700 Riverfront Gate, Burnaby, British Columbia V5J 5M4
Tel.: (604) 294-8477 Fax: (604) 294-3733
E-mail: info@tirsys.com

ANNUAL REVENUE: $30,337,500 (2004)
NUMBER OF EMPLOYEES IN CANADA: 122
YEAR INCORPORATED: 1982
STOCK MARKET LISTING: TSX: TIR
INDUSTRIAL SECTOR: Transportation
WEB SITE: www.tirsys.com

Products or Services
TIR Systems was founded in September 1982 to commercialize prism light guide technology, invented at the University of British Columbia and operating on the principle of Total Internal Reflection, hence the name TIR Systems Ltd.

Using its world leadership in Light Pipe technology as a starting point, its mission is to become a world leader in solid state lighting (SSL), based on light-emitting diodes (LEDs). The company now has a number of SSL product ranges which target and compete in the architectural and corporate identity markets.

Our high performance architectural luminaire range, the Destiny Series, is being applied to building exteriors, bridges, features and spaces where controllable colour-changing light is in demand to increase prominence within cityscapes and on skylines of the world. Here the global market for architectural SSL products in 2007 is predicted to be US$400 million (based on figures supplied by Strategies Unlimited in Solid State Lighting: Growth Opportunities for High Brightness LEDs 2002).

In corporate identity, LED-based lighting competes with neon on brightness as well as having compelling environmental benefits. The energy savings and reduced maintenance costs mean that companies trying to increase the brand recognition of their product using lighting can save exponentially across their sites worldwide. Examples are fast food chains and petroleum retailers where being seen and recognized from a distance can attract potential customers. The global market for SSL in just two types of signage lighting product is an estimated US$575 million in 2007 (Navigant Consulting for the US Department of Energy).

NSERC Researchers
The inventor of Light Pipe technology, Lorne Whitehead, is a professor of physics, Vice President Academic and Provost of the University of British Columbia. Dr. Whitehead received support for the development of the Light Pipe prototype through an NSERC grant. He currently holds the 3M/NSERC Industrial Research Chair in Surface Physics. NSERC supports Dr. Whitehead’s research with Strategic Project, and Collaborative Research and Development Grants.
Products or Services
TurboSonic has applied its proprietary technology to a wide variety of air pollution control problems for industries such as pulp and paper, wood products, mining, non-ferrous metallurgical, iron and steel, chemical, waste processing, waste incineration, power generation, and cement.

The TurboVenturi Scrubber is the industry standard for very high efficiency particulate control. The Turbotak Scrubber removes solid, liquid and gaseous contaminants from process exhaust streams at higher efficiencies and lower operating costs than conventional equipment. The SonicKleen Wet Electrostatic Precipitator achieves high energy-efficiency sub-micron particulate capture (including heavy metals) at lower energy consumption than wet scrubbing for power boilers, product dryers, waste incineration and acid plants. SoniCool Evaporative Gas Cooling Systems control the temperature and humidity of process gases and enhance air pollution control efficiencies. DryFog Dust Suppression Systems control dust arising from material handling with TurboSonic Nozzles. TurboSonic is a leader in dust control thanks to its engineered systems that control virtually all types of respirable and larger-sized fugitive dust. These products represent economic and technical advantages over conventional equipment and are designed to meet the strictest emission regulations, including US EPA MACT standards.

NSERC Researchers
TurboSonic was founded as Turbotak by Dr. Donald Spink, a chemical engineering professor at the University of Waterloo, now retired. Turbotak’s research has been supported through several Strategic Project, and Discovery Grants, as well as Collaborative Research and Development Grants with industry.
VCom® is a world-leading designer and manufacturer of high quality, state-of-the-art products that enable high-speed, on-demand broadband access to cable, wireless and telephony networks. Embedded software developed by VCom enables their hardware products to perform multiple complex functions. Service providers use the company’s solutions to deliver high-speed Internet, digital video and other bandwidth-intensive services to residential and business subscribers. VCom’s solutions allow service providers to rapidly and cost-effectively bridge the final network segment that connects a system directly to end-users.

VCom’s core expertise is radio frequency (RF) technology and embedded software for very high-speed digital signal processing, high-level modulation and RF circuit control. The company deploys these competencies in three main markets: Data over Cable and Video on Demand (VOD). The Data over Cable products include a family of upconverters that process data from routers and convert it to higher frequencies for transmission to subscribers. VCom’s products include transmitters and transceivers that process data from routers and transmit it to subscribers over wireless infrastructure. The company’s products include modulators, modulator/upconverters, transmodulators and a gateway device that transports video streams from central servers and transmits them to subscribers. They have also developed and continue to focus on developing products to address emerging markets, such as Voice over Internet Protocol (VoIP) and IP video.

Since its inception in 1988, VCom has linked cutting-edge research and development with strategic partnerships to achieve remarkable growth in sales, profit, customer base and personnel. Its strength in engineering and manufacturing is reflected in a large family of high quality, high performance and very competitive products that are sold worldwide.

VCom’s head office is located in Saskatoon, Saskatchewan and the company’s Microwave Research Laboratory and executive office are located in Victoria, British Columbia.

NSERC Researchers

VCom® was founded by Dr. Surinder Kumar, a former electrical engineering professor at the University of Saskatchewan, Dr. Kumar, a recognized expert in microwave engineering, has received many NSERC Discovery Grants. His latest research involves the study of receivers, direct modulators, and linearizers for digital mobile radios, and LMDS and MMDS.
VEMAX Management Inc.

Chief Executive Officer: Ray Gerke
Innovation Place, 15 Innovation Boulevard, Suite 209
Saskatoon, Saskatchewan   S7N 2X8
Tel.: (306) 668-2828   Fax: (306) 668-7603
E-mail: saskatoon@vemax.com

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 15
YEAR INCORPORATED: 1994
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Software and Computer Services

WEB SITE: www.vemax.com

Products or Services
VEMAX Management, part of the VEMAX group, is located in Saskatoon, Saskatchewan, with offices in Winnipeg, Manitoba, Edmonton, Alberta, and Sydney and Melbourne in Australia. VEMAX assists all levels of government to improve their efficiency, effectiveness and accountability. VEMAX provides training, software, business process design, as well as ongoing support and consulting services in the application of the principles of asset management to public sector infrastructure assets. VEMAX’s services include using the company’s iBOS (Infrastructure Budgeting Optimization System) software. The iBOS system gathers the many details of infrastructure management under a single umbrella, thus providing a review of a client’s business processes and assessing their ability to deliver optimal infrastructure preservation strategies.

VEMAX has worked with the Canadian Strategic Highway Research Program as well as many highway and city engineering departments to find more cost-effective ways of rehabilitating pavements as Canada’s highways reach the end of their first life cycles. VEMAX uses performance modelling, which predicts how pavements will perform under various maintenance and rehabilitation strategies.

NSERC Researchers
Dr. Gordon Sparks and Ray Gerke joined forces in 1994 to form VEMAX Management. Dr. Sparks managed the company’s R&D division until his recent appointment as vice-president of business development. Dr. Sparks is a professor of civil engineering at the University of Saskatchewan. NSERC has supported Dr. Sparks’ research with Collaborative Research and Development, Discovery, and Strategic Project Grants.
Virtek Vision International Inc.

President and Chief Executive Officer: Bob Sandness
785 Bridge Street, Waterloo, Ontario N2V 2K1
Tel.: (519) 746-7190 Fax: (519) 746-3383
E-mail: info@virtek.ca

ANNUAL REVENUE: $50,274,000
NUMBER OF EMPLOYEES IN CANADA: 166
YEAR INCORPORATED: 1986
STOCK MARKET LISTING: TSX: VRK
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.virtek.ca

Products or Services
Virtek Vision International is a leading provider of precision laser-based templating, inspection, marking and engraving solutions for industrial material processing. Virtek serves customers in the prefabricated construction, transportation, metalworking, tool and die, and mold making industries, worldwide. The company’s solutions enable customers to produce their products faster, better and at a lower cost. The majority of Virtek’s sales are in the United States and Europe.

Virtek maintains offices in Waterloo, Ontario; Boston, Massachusetts; Lüdenscheid and Nürnberg, Germany; and Ebina City, Kanagawa, Japan.

NSERC Researchers
University research by two of Virtek Vision International’s founders, Dr. Andrew Wong and Dr. Mohamed Kamel, has been supported by NSERC Discovery, Strategic Project and Research Tools and Instruments Grants. Dr. Wong is Professor Emeritus and chairman of PAMI (Pattern Analysis and Machine Intelligence Laboratory) in the Department of Electrical and Computer Engineering at the University of Waterloo. Dr. Mohamed Kamel is professor and PAMI director in the Department of Electrical and Computer Engineering at the University of Waterloo. Dr. Kamel also holds the Canada Research Chair in Cooperative Intelligent Systems.
Vivosonic Inc.

President and Chief Executive Officer: Dr. Yuri Sokolov
56 Aberfoyle Crescent, Suite 620, Toronto, Ontario M8X 2W4
Tel.: (416) 231-9997 Fax: (416) 231-2289
E-mail: vivo@vivosonic.ca

ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 12
YEAR INCORPORATED: 1999
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Medical Devices and Instrumentation
WEB SITE: www.vivosonic.com

Products or Services
Vivosonic develops and manufactures novel medical devices. The company’s products offer health care professionals diagnostic solutions with high-quality, user-friendly instruments based on the most advanced computer, signal processing and communications technologies.

The company has developed Vivography™ to detect and assess hearing deficiencies. The non-invasive procedure is a digital signal processing methodology that extracts physiological signals from noise.

Vivosonic has also developed the VivoScan, an Otoacoustic Emission (OAE) audiometer. The ear probe containing two miniature microphones and two speakers sends tones or clicks in the patient’s ear and then detects sounds (OAE’s) coming back from the ear, and analyzes and displays them on a notebook computer.

In 2005, the U.S. Food and Drug Administration (FDA) and Health Canada approved Vivosonic’s newest technology, Integrity™, the world’s first and only wireless objective hearing-assessment system. In addition to OAEs, it records electrical responses from the hearing system – Auditory Brainstem Response (ABR) and Auditory Steady State response (ASSR). Novel techniques result in very clear, fast and easy-to-interpret responses, even in environments with significant electromagnetic interferences. The mobility offered by Integrity™ will be particularly beneficial for paediatric applications and practitioners monitoring hearing in operating rooms, and has the potential for other medical applications.

NSERC Researchers
As an adjunct professor at the Institute of Biomaterials and Biomedical Engineering at the University of Toronto, Dr. Yuri Sokolov co-developed Vivography™ and co-founded Vivosonic to commercialize this technology. He now serves as Vivosonic’s president and chief executive officer. An NSERC grant in 1996 funded the research that led to the development of the Vivography™ technology and the creation of Vivosonic.
VoiceAge Corporation

Vice-President, Research and Development: Redwan Salami
750 Lucerne Road, Suite 250, Montréal, Quebec H3R 2H6
Tel.: (514) 737-4940 Fax: (514) 908-2037
E-mail: redwans@voiceage.com

Products or Services

VoiceAge is recognized as the world leader in the development and dissemination of speech and audio compression technologies at the convergence of wireless and wired networks. Designed to run on the company’s patented ACELP® technology platform, VoiceAge’s technologies and solutions offer unsurpassed audio quality in terms of both international standards and proprietary applications experienced daily by more than two billion users around the world. ACELP® is the foundation for the low bit rate speech and audio codecs in cellular and wired communications, consumer electronic products and Internet applications.

Financed and marketed primarily by VoiceAge, a strategic partner of the Université de Sherbrooke, the patented technology platform ACELP® has to date generated more than 400 patents that are included in 15 international communication standards: GSM EFR (ETSI), PCS 1900, IS136 (TIA, North American TDMA), IS 95 (TIA, North American CDMA), TETRA (ETSI), G.729 (ITU-T), G.723.1 (ITU-T), AMR (Adaptive Multi-Rate) narrowband (ETSI and 3GPP), AMR-WB (3GPP), G.722.2 (ITU-T), MPEG-4 CELP Audio (ISO), PDC-EFR (ARIB-Japan), VMR-WB (3GPP2) and, more recently, AMR-WB+ (3GPP).

As licensing administrator, VoiceAge represents and also manages a number of patent pools for holders of those patents, such as Nokia and Ericsson. The patent pools were created in order to use licensing as a way to facilitate the marketing of patent portfolios that are essential to the use of certain telecommunications standards on fair, reasonable, non-discriminatory terms.

NSERC Researchers

Researchers Jean-Pierre Adoul, Claude Laflamme, Redwan Salami, Bruno Bessette, Roch Lefebvre and Milan Jelinek of the Université de Sherbrooke’s speech and audio research group are the main inventors of the ACELP® technology platform. Since 1995, with its strategic partners Sipro Lab Telecom and VoiceAge, this internationally renowned research group has received financial support from NSERC through various grant programs that support university-industry partnerships.
Western Ag Innovations manufactures and distributes the Plant Root Simulator probe (PRS™-probe) to discover the dynamic nutrient supply of soil. Customers ranging from farmers to research scientists use the PRS™-probes to know the exact soil nutrient supply of their research sites or farmland. The PRS™-probe consists of an ion exchange membrane, a small strip of translucent material that contains either a positive or negative charge. The membrane attracts minerals of the opposite charge as they are cycled through the living soil. A one-day measurement with the PRS™-probe is then downloaded to a powerful software tool called the PRS™ Forecaster. Farmers use this tool to predict if the soil supply can meet the plants’ demands for a particular set of growing conditions. Using the PRS™ technology, fertilizer nutrients are more judiciously applied since the balance of soil nutrients required can be matched to crop demand.

PRS™ technology can be used to measure levels of some herbicides and pesticides, as well as other important organic ions. It has also proven to be a useful tool for monitoring industrial pollution, such as soil contamination around oil fields.

Western Ag Labs was created to deliver PRS™ technology directly to the farmers. This company also provides nutrient forecasting and crop nutrition planning by testing soil samples, and using soil maps and satellite imaging to find the right fertilizer blend for each farm.

NSERC Researchers

Ken Greer, president of Western Ag Innovations, is a former associate in Dr. Jeff Schoenau’s research program. Mr. Greer founded the company to commercialize Dr. Schoenau’s research into the Plant Root Simulator. Dr. Schoenau is a research scientist and professor in the Department of Soil Science at the University of Saskatchewan. He is also a working farmer with 1,200 acres of land near Central Butte, Saskatchewan, where he uses the Plant Root Simulator regularly. NSERC supported some of Dr. Schoenau’s early research on the Plant Root Simulator technology with a Collaborative Research and Development Grant. Western Ag Innovations and Dr. Jeff Schoenau won an NSERC Synergy Award for Innovation in 2004 for their work on the Plant Root Simulator.
Westport Innovations Inc.

Chief Executive Officer: David Demers
1700 West 75th Avenue, Suite 101, Vancouver, British Columbia V6P 6G2
Tel.: (604) 718-2000 Fax: (604) 718-2001
E-mail: info@westport.com

**ANNUAL REVENUE:** $32,400,000 (December 2004)
**NUMBER OF EMPLOYEES IN CANADA:** 140
**YEAR INCORPORATED:** 1995
**STOCK MARKET LISTING:** TSX: WPT
**INDUSTRIAL SECTOR:** Environmental Technologies
**WEB SITE:** www.westport.com

**Products or Services**
Westport Innovations is the leading developer of technologies that allow engines to operate on clean-burning fuels such as natural gas, hydrogen and hydrogen-enriched natural gas (HCNG). Westport has technology development alliances in place with Ford, MAN, BMW and Isuzu, and an ownership interest in Clean Energy, the largest provider of vehicular natural gas in North America.

Cummins Westport, a joint venture of Cummins (NYSE:CMI) and Westport Innovations (TSX:WPT), manufactures and sells the world’s widest range of low-emissions alternative fuel engines for commercial transportation applications such as trucks and buses. Cummins is a global power leader in engines, electrical power generation systems and related technologies. More information on this venture can be found at www.cumminswestport.com.

**NSERC Researchers**
Dr. Philip Hill is a Professor Emeritus in the Department of Mechanical Engineering at the University of British Columbia. A specialist in combustion, his research has been supported by NSERC Discovery, Strategic Project, and Research Tools and Instruments Grants. His technology was licensed in 1994, resulting in the formation of Westport Innovations.
**Wi-LAN Inc.**

President and Chief Executive Officer: William Dunbar  
2891 Sunridge Way NE, Calgary, Alberta T1Y 7K7  
Tel.: (403) 273-9133 Fax: (403) 273-5100  
E-mail: info@wi-lan.com

**ANNUAL REVENUE:** $25,336,000  
**NUMBER OF EMPLOYEES IN CANADA:** 160  
**YEAR INCORPORATED:** 1992  
**STOCK MARKET LISTING:** TSX: WIN  
**INDUSTRIAL SECTOR:** Telecommunications  
**WEB SITE:** www.wi-lan.com

**Products or Services**

Wi-LAN is a global provider of broad-band wireless communications products and technologies, offering businesses, including telecom service providers and government enterprises, effective, economic and secure wireless high-speed communications solutions. Wi-LAN specializes in high-speed Internet access, data network extension, wireless Voice-over-IP, and wireless data and telephony backhaul, utilizing its high quality products and industry-leading technologies.

Wi-LAN believes its portfolio of patents, including its core W-OFDM patents and 17 patents and patent applications acquired from Ensemble Communications in May 2004, are necessary for the implementation of devices using the IEEE 802.16 WirelessMAN™ Standard and the ETSI BRAN HiperMAN™ standard (the WiMAX Forum™ standards). As well, Wi-LAN’s W-OFDM patents are believed to be required for the implementation of devices using the IEEE standards 802.11a and 802.11g (the second generation Wi-Fi Alliance™ standards), and the ETSI BRAN HiperLAN/2™ standard. Wi-LAN licenses its patented technology and has executed non-exclusive W-OFDM license agreements with semiconductor and broadband wireless equipment companies.

Wi-LAN is the chair company of the OFDM Forum and a charter member of the WiMAX Forum™ (www.wimaxforum.org).

**NSERC Researchers**

Wi-LAN was founded by Drs. Hatim Zaghloul and Michel Fattouche after the long-time friends developed a new wireless technology called Wide-Band Orthogonal Frequency Division Multiplexing (W-OFDM). The partners negotiated for patent rights with AGT Ltd. (now TELUS Corp.), where Dr. Zaghloul was working as a senior researcher. Drs. Zaghloul and Fattouche hold two joint patents as well as individual patents for leading-edge technological breakthroughs. Dr. Zaghloul currently serves as a Wi-LAN board member. Dr. Fattouche is an officer of Cell-Loc, another company that he and Dr. Zaghloul founded. He is a dedicated researcher and associate professor in the Department of Electrical and Computer Engineering at the University of Calgary. A former NSERC senior industrial fellow, Dr. Fattouche’s research was supported by NSERC Discovery Grants. Dr. Zaghloul was the recipient of an NSERC Postgraduate Scholarship.
In the past few years, wildlife managers, game farmers, breeders and researchers involved in population and conservation studies have expressed a growing need for commercial DNA fingerprinting. Wildlife Genetics International’s superior wildlife genetic analysis provides these groups with DNA extractions, microsatellite genotyping, species testing, gender analysis, identity analysis and raw databases of results.

Most of Wildlife Genetics’ work involves bears. The company estimates the size of bear populations by means of mark-recapture methods that use small samples of hair collected from sites, which are then subjected to DNA analysis. The technology is used in a wide range of applications from basic research and environmental impact assessments to wildlife forensics.

Wildlife Genetics International was co-founded by Dr. Curtis Strobeck, a professor of biological science at the University of Alberta. Dr. Strobeck, who also serves as a scientific advisor at Wildlife Genetics, is an internationally recognized DNA forensics and conservation geneticist. An NSERC Discovery Grant helped support Dr. Strobeck’s research into genetic markers. The development of bear and elk genotyping was carried out by two students, David Paetkau and Renée Polziehn, as part of their graduate research. Dr. Paetkau held an NSERC Postgraduate Scholarship and an NSERC Postdoctoral Fellowship at the University of Queensland in Australia. Dr. Polziehn, now the outreach director for the Faculty of Graduate Studies and Research at the University of Alberta, received an NSERC Undergraduate Student Research Award and a PromoScience grant for outreach activities aimed at elementary and secondary students. Dr. Strobeck’s research has been supported by Discovery, Collaborative Research and Development, and Research Tools and Instruments Grants for over 20 years.
ZENON Environmental Inc.

Chairman and Chief Executive Officer: Dr. Andrew Benedek
3239 Dundas Street West, Oakville, Ontario L6M 4B2
Tel.: (905) 465-3030  Fax: (905) 465-3050
E-mail: Not listed

ANNUAL REVENUE: $233,795,000
NUMBER OF EMPLOYEES IN CANADA: 850
YEAR INCORPORATED: 1980
STOCK MARKET LISTING: TSX:ZEN and ZEN.NV.A
INDUSTRIAL SECTOR: Environmental Technologies
WEB SITE: www.zenonenv.com

Products or Services
ZENON Environmental is a world leader in providing membrane-based separation products and services for water purification, process separation and wastewater treatment, and water reuse applications. The ZENON group of companies operates from seven locations in North America, six in Europe, and one each in Latin America, Asia and the Middle East. ZENON’s products and services are marketed for a variety of municipal, industrial and government applications worldwide through its offices and representatives.

ZENON specializes in ultrafiltration membrane technologies to purify, separate, concentrate or recycle water and waste. ZENON also uses many complementary processes such as ion exchange, adsorption and biodegradation to satisfy clients’ requirements. It has hundreds of installations worldwide that purify, treat or recycle water from municipalities and all types of industries. The company also has a large number of units that purify water for the army and the navy.

ZENON’s quality assurance programs meet the highest international standards for the industry. Customer support is provided by an experienced service department and an application engineering group.

ZENON frequently works in partnership with its clients to develop new technological solutions. The company also partners with complementary businesses around the world to better serve its global client base.

NSERC Researchers
ZENON Environmental’s founder is Dr. Andrew Benedek, a former chemical engineering professor at McMaster University. NSERC supported his early investigations with Discovery Grants.
Zoomage Inc.

Director, Research: Dr. Raymond R.S. Howard
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ANNUAL REVENUE: Confidential
NUMBER OF EMPLOYEES IN CANADA: 10
YEAR INCORPORATED: 1996
STOCK MARKET LISTING: Not listed
INDUSTRIAL SECTOR: Computer, Electronic and Electrical Equipment
WEB SITE: www.zoomage.com

**Products or Services**

Zoomage, formerly known as TelePhotogenics, specializes in super high resolution 360° and 3D digital imaging hardware and software. The company has recently launched the Zoomage3D digital scanner, which can generate super high resolution (SHR) texture and wire-frames for 3D objects. 3D products are projected to have a large emerging market in the medical field, computer games and graphics because of their high quality and modest cost.

In 2001, Zoomage released Zoomage360, a digital camera capable of capturing 24-bit colour images with up to 216 megapixels covering a 360° view. Combined with the company’s proprietary Zoomage™ software, Zoomage360 provides an effective means for super high resolution content creation and visualization at an affordable price.

Zoomage’s collaborators include Keewatinok Lakes Regional Health Authority and Silicon Graphics Inc. Different application demos can be found at www.zoomage.com.

**NSERC Researchers**

Dr. Anup Basu, a professor in the Department of Computing Science at the University of Alberta, participated in the formation of Zoomage, formerly known as TelePhotogenics. Dr. Basu is currently involved in several collaborative R&D initiatives ranging from museum archiving to 3D medical diagnostics. Dr. Basu introduced several novel concepts and implementations in the computer vision and graphics area, including high resolution teleconferencing and on-line visualization systems, panoramic stereo with a single camera, active camera calibration without point correspondence, and seamless integration of three Charge-Coupled Devices for 360° and 3D imaging. His research has been supported by NSERC Discovery, Research Tools and Instruments, and Collaborative Research and Development Grants.