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*HIGH TECHNOLOGY OPPORTUNITIES*

## *MEDICAL DEVICES*



***CANADIAN PARTNERS CAN MAKE  
A WORLD OF DIFFERENCE!***

- *DIAGNOSTICS*
- *PROSTHETICS*
- *ORTHOPAEDICS*
- *BIOMATERIALS*
- *REHABILITATION*
- *CARDIOVASCULAR*
- *MEDICAL IMAGING*
- *ASSISTIVE DEVICES*
- *NUCLEAR MEDICINE*

***CANADA HAS ALL  
THE ELEMENTS YOU  
NEED TO MAKE YOUR  
GLOBAL BUSINESS  
STRATEGIES SUCCEED***

**Canada**

## **THE CANADIAN ADVANTAGE**

The Medical Devices sector in Canada has recently emerged as a rapid-growth, high-technology industrial sector. As a result, medical devices manufacturing has become a focal point for important Canadian government and industry initiatives designed to support industrial opportunity, growth and achievement.

This is a period of significant challenge and change for the North American health-care sector. Cost containment and environmental sensitivities, along with the AIDS crisis and an ageing population, have acted as catalysts in the move towards alternate site/home health care and preventive health maintenance. Traditional methods of treatment and devices utilization are being revolutionized by these emerging trends, and major advances in strategic technologies are creating product opportunities for the enterprising and innovative medical devices manufacturer.

Canada's existing strengths provide an attractive base for investment in the medical devices industry. Among those strengths are: an excellent health-care system; government supported programs, including R&D tax credits; a favourable regulatory environment; highly skilled health scientists, researchers and technical personnel, and a well-developed research, science and technology infrastructure. Under current trade agreements, Canada has also emerged as an appealing gateway to the large North American medical devices market.

The Canadian advantage will become apparent as you read through this preface. The enclosed company profiles illustrate some of the exciting opportunities that can be pursued in Canada, whether your company is a major American business looking to better leverage your R&D dollars, or a European or Asian firm looking for the right North American market access.

**INDUSTRY, SCIENCE AND  
TECHNOLOGY CANADA**

**EXTERNAL AFFAIRS AND  
INTERNATIONAL TRADE CANADA**

**INVESTMENT CANADA**



*Photo courtesy of Vas-Cath Inc.*

*Cover photos courtesy of the National Research Council of Canada*

**CANADIAN  
STRENGTHS**

***BUSINESS AND RESEARCH OPPORTUNITIES***

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1. Canada offers tremendous growth potential for American, European and Asian firms.
2. A Canadian location offers significant advantages.

***CANADIAN MARKETS***

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3. A broad support from core technologies such as biotechnology, telecommunications and biomaterials.
4. An international reputation for excellence in health care.

***EXTENSIVE KNOWHOW***

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5. A pool of highly skilled scientists, engineers and medical research professionals.
6. A well-developed medical research infrastructure.
7. A well-networked research community.
8. Leading-edge Canadian Technology Centres.

***FINANCIAL INCENTIVES***

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9. Competitive corporate taxation.
10. Competitive tax incentives for research and development.

***GOVERNMENT INCENTIVES***

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11. A variety of federal government programs to support industry.
12. Provincial government assistance programs.

***CANADIAN REGULATORY ENVIRONMENT***

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13. A favourable regulatory climate with a streamlined product approval process.

***CANADIAN INFRASTRUCTURE***

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14. Cost-effective and reliable transportation and communication networks across North America and around the world.

## **1. CANADIAN OPPORTUNITIES AWAIT**

### *FOR AMERICAN FIRMS AND INVESTORS*

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Canada offers lower cost clinical trials, conducted in world-class institutions, a highly favourable regulatory environment, and extensive R&D leveraging to allow quick and low cost access to the world market.

"Following several years of funding a U.S. university project, we decided to commercialize the resulting technology in Canada. Without loss of equity, we raised the required first round funding through government programs, while also benefiting from access to government research facilities."

Mr. Robert Heft  
Ibex Technologies

"The exciting new Photo Dynamic Technology developed by Quadra Logic Technologies has substantial potential for the treatment of cancer. American Cyanamid, through its Lederle Pharmaceutical Division, has a major presence in cancer chemotherapy. A strategic alliance between these two companies clearly has a good deal of synergy."

Mr. W. J. Foran  
Cyanamid Canada Inc.

### *FOR EUROPEAN AND ASIAN FIRMS AND INVESTORS*

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Geographic proximity, duty-free access and a favourable regulatory process translate into quick market entry and make Canada the ideal location from which to access the \$27 billion North American medical devices market.

"The Canadian strategy makes a great deal of sense to Vernon. It gets our feet wet in North America, enables us to learn the ropes, establish our team and cash flows, and tailor our approach to this enormous market. We begin by walking before we run."

Mr. Bernard Hatton  
Vernon & Company (Pulp Products) Limited

"We found in Montreal easy access to suppliers; a trained work force; a good opportunity to develop new equipment and devices, and access to the entire North American market."

Mr. Steven Lindmayer  
Alliance Medical Inc.

"A number of foreign-owned plants operating in Canada are systematically examining ways in which they can prosper under changing world market conditions. As trading barriers continue to decline under the Free Trade Agreement, Canadian plants with historical domestic mandates protected by high import tariff barriers must develop new strategies with their parents in order to prosper in the 90s."

Mr. Phil Nance  
The Medical Devices Association of Canada

## **2. WHY CANADA?** *A CANADIAN LOCATION OFFERS SIGNIFICANT ADVANTAGES*

- Highly skilled scientific, engineering and managerial resources
- Government support and assistance allowing R&D leveraging and greatly reduced startup costs
- Strong technology base and world-class product development institutions
- Highly favourable regulatory environment aimed at developing export markets
- Top 10 domestic market size
- Similar protocols, technologies and products as the U.S.
- Well-developed support industries
- Innovative Canadian firms seeking strategic alliances

*Source: Consulmed/Consultech*



*Photo courtesy of the National Research Council of Canada*

### 3. THE CANADIAN MEDICAL DEVICES SECTOR

Medical devices can be defined generally as health-care products used for diagnostic or therapeutic purposes which are not drugs or medicines. The driving force behind the Canadian industry is the integration of a number of core technologies necessary for the development and manufacture of sophisticated medical devices including biomaterials, microelectronics, biotechnology, nuclear energy and telecommunications.

- Canadian medical devices manufacturing employs more than 10,000, with a wide range of technical skills and expertise.
- Over 650 firms manufacture approximately 1,500 categories of medical devices. The majority of Canadian-based manufacturers are small to medium-sized enterprises.
- Products range from mass-produced disposables to state-of-the-art equipment such as three-dimensional imaging, cobalt therapy and cardiac pacemakers. Several Canadian companies have achieved world-class standing by developing superior products to supply niche markets.
- Canada's domestic market of \$2.5 billion places it in the top 10 consuming countries.
- Canada exports more than 50 per cent of its medical devices to the United States.
- There is a growing number of medical devices firms receptive to technology exchange as well as joint-venture arrangements.

Some of Canada's areas of expertise in medical devices research are highlighted in the following table.

<p><b>Cardiovascular</b></p> <ul style="list-style-type: none"> <li>• implants and circulatory assist devices</li> <li>• ablation technology</li> <li>• microcirculation</li> <li>• stenting</li> <li>• atherectomy</li> </ul>	<p><b>Diagnostics</b></p> <ul style="list-style-type: none"> <li>• biotechnology</li> <li>• radiation</li> <li>• ultrasound</li> <li>• <i>in vitro/in vivo</i></li> <li>• EEG and MEG systems</li> </ul>
<p><b>Orthopaedics/Orthotics/Prosthetics</b></p> <ul style="list-style-type: none"> <li>• artificial ligaments</li> <li>• testing devices</li> <li>• computer assisted design (CAD) of devices</li> <li>• myoelectric control</li> <li>• biocompatible/inert materials</li> </ul>	<p><b>Assistive Devices/Rehabilitation</b></p> <ul style="list-style-type: none"> <li>• wheelchair seating</li> <li>• voice controlled/activated devices</li> <li>• light pointer systems</li> <li>• telecommunications aids</li> <li>• robotics</li> </ul>
<p><b>Medical Imaging/Nuclear Medicine</b></p> <ul style="list-style-type: none"> <li>• imaging</li> <li>• therapy</li> <li>• digital imaging</li> <li>• magnetic resonance</li> </ul>	<p><b>Biomaterials</b></p> <ul style="list-style-type: none"> <li>• implants</li> <li>• vascular grafts</li> <li>• catheters</li> <li>• biocompatible and biodegradable materials</li> <li>• connective tissues</li> </ul>

Source: Consulmed/Consultech

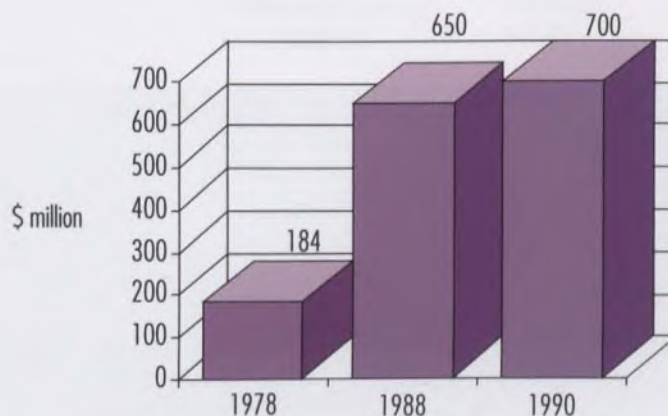
## 4. CANADA'S EMERGING MEDICAL DEVICES INDUSTRY

Canada has an international reputation for excellence in health care with a wealth of medical skill and expertise in hospitals, research institutions, universities and government laboratories across Canada.

- Canada is recognized as one of the world leaders in innovations relating to health-care delivery with a national universal-access system administered by each of the 10 provinces.
- As a consumer and user of medical devices, Canada ranks as one of the top 10 countries with an estimated domestic market of \$2.5 billion in 1990, and an annual health-care budget of approximately \$60 billion.
- Each province has its own hospital association under the umbrella of a national association. There are 1,200 hospitals (175,000 beds), of which approximately 100 are members of the Association of Teaching Hospitals.
- There are over 100 clinical trial facilities in hospitals, universities and independent facilities across the country.
- Canadian medical devices manufacturers have formed several provincial industry associations as well as a national association.

Source: BIOS

### CANADIAN PRODUCTION OF MEDICAL DEVICES



Canadian production of medical devices has grown steadily over the past 15 years. The dollar value of production has nearly tripled since 1978 to reach an estimated \$650 to \$700 million in 1990.

Source: Statistics Canada/Medical Devices Sector Initiative Business Climate, Roy Anderson & Assoc., 1991

## 5. TALENTED LABOUR POOL

### HUMAN RESOURCES

Canada has a pool of highly skilled scientists, engineers and medical research professionals which ranks with the world's advanced industrialized nations.

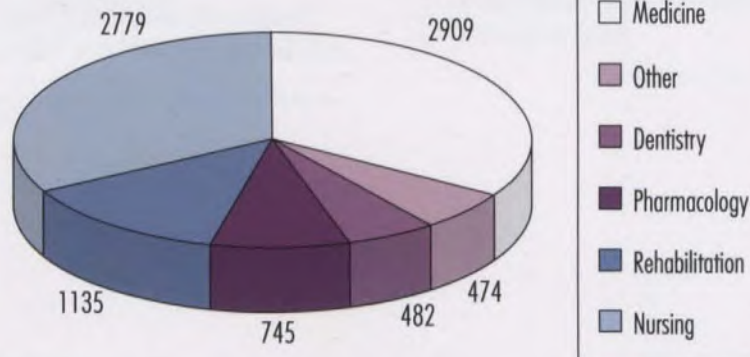
- There are more than 10,000 employees of medical devices manufacturing with a wide range of technical skills and expertise.
- Canada has 60,000 physicians, 13,000 dentists, 19,000 pharmacists and 250,000 nurses.
- In addition, a steady flow of new graduates is provided every year by 16 universities with medical faculties and 14 universities with specialized training in biomedical engineering.

Number of Graduates	BSc/College	MSc/PhD	Total 1989
<b>Engineering Sciences</b>			
Chemical	626	185	811
Electrical	2,011	503	2,514
Mechanical	1,803	263	2,066
Other	2,637	785	3,422
<b>Physical/Biological Sciences</b>			
Chemistry	992	375	1,367
Computer Science	2,558	363	2,921
Physics	704	307	1,011
Biochemistry	846	725	1,571
Biology	3,980	407	4,387
<b>Health Professionals</b>			
1970	3,475	374	5,042
1980	5,759	641	7,641
1989	7,309	1,215	10,232

Source: Consulmed/Consultech

### NUMBER OF GRADUATES, 1989

#### Health Care Professionals



Source: Consulmed/Consultech



## 6. WELL-DEVELOPED MEDICAL RESEARCH INFRASTRUCTURE

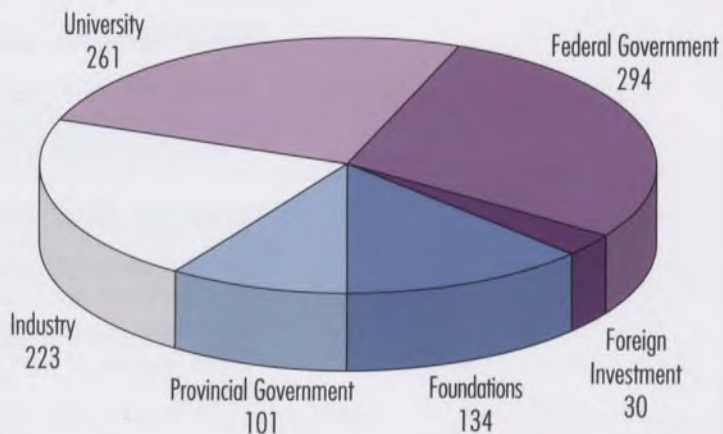
### RESEARCH AND DEVELOPMENT

Canada has a well-developed medical research infrastructure. Medical devices manufacturers have worked closely with research institutes, teaching hospitals/universities and government research centres to successfully bring innovative new technologies to market. The current climate for research and development ranks higher than all other industrialized nations with a demonstrated ability to leverage R&D by 65 per cent.

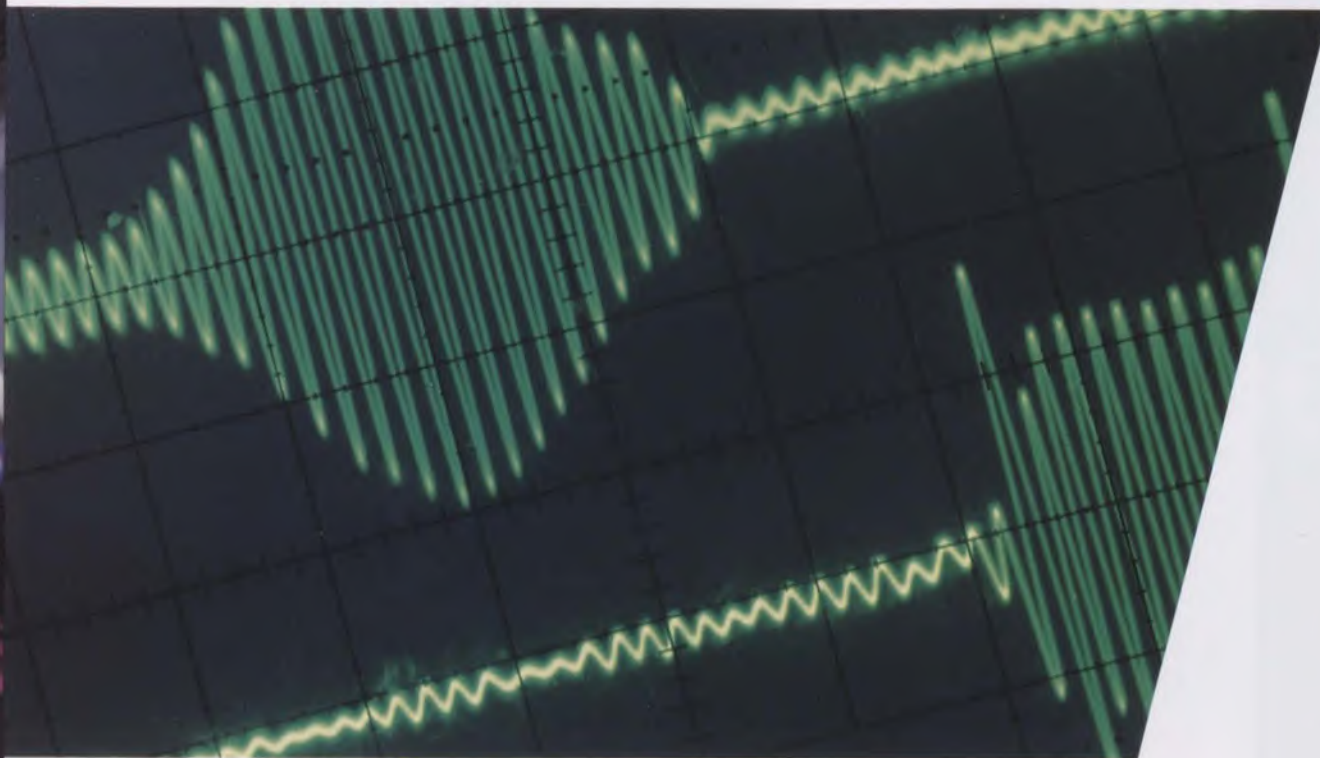
- The Canadian R&D infrastructure is supported by almost \$4 billion of direct government expenditure.
- In 1990, over \$1 billion was spent on Canadian health-care research with approximately \$80 million of that directly applicable to the medical devices sector.

### R&D EXPENDITURE IN THE HEALTH-CARE FIELD

1990 (Million \$)



Source: NGL



## **7. WELL-NETWORKED RESEARCH COMMUNITY**

### ***NETWORKS OF CENTRES OF EXCELLENCE***

The Network of Centres of Excellence (NCE) is an example of solid Canadian collaboration in world-class research projects. The NCE program breaks down barriers between disciplines, ideas, and institutions. This co-operation heralds a new era of networking and co-operation across the country as research and industry are brought together to boost research, develop scientists' skills and increase technical knowledge.

Six of the 15 federal Centres of Excellence conduct research directly related to medicine or medical devices.

#### ***Genetic Basis of Human Disease: Innovations for Health Care***

This centre will study the genes that directly cause or predispose humans to disease. The goal is to determine the biological function of each of the relevant genes and to discover how mutation in each causes disease. This research could lead to major commercial opportunities in the areas of DNA diagnostics and therapeutics.

#### ***Neural Regeneration and Functional Recovery***

The Neural Regeneration and Functional Recovery Centre has a budget of \$25.5 million. Its objective is the commercialization of implantable microstimulators and a gait analysis system. Industrial involvement in this centre is provided by Otto Bock, BioMech Design, Sandoz, Ciba-Geigy, and Parke Davis.

#### ***Respiratory Health Network of Centres of Excellence***

The network is concerned with improved patient care, reduced health-care costs, new drugs to overcome airway blockage in cystic fibrosis and asthma, and the development of new apparatus such as improved mechanical lung ventilators and lung testing kits. Participants include Merck Frosst, Engineering Interface, and the Universities of British Columbia, Calgary, Manitoba, Montréal, Saskatchewan, Laval, McGill, and McMaster.

#### ***Protein Engineering: 3-D Structure, Function and Design***

The Protein Engineering Centre uses a variety of techniques to understand the functioning of proteins and then to improve them by making systematic changes to their building block structure. Improved proteins can be of enormous benefit in the treatment of infectious diseases. Close industrial ties give the network an excellent potential for technology transfer and spin-offs.

#### ***Bacterial Diseases:***

#### ***Molecular Strategies for the Study and Control of Bacterial Pathogens***

The network focuses on bacterial attack and host response in different biological systems. The causative agents of human diseases as well as those affecting agriculture and aquaculture are being studied. Participants include Connaught Labs, Microteck R&D Ltd., National Research Council, Chembiomed, and the Universities of Alberta, British Columbia, Calgary, Guelph, Victoria, and Laval.

#### ***Institute of Robotics and Intelligent Systems***

This network operates as a component of a consortium of 32 companies whose mission is to carry out advanced R&D in robotics and artificial intelligence. Participants include universities and R&D institutions across Canada.

## **8. CANADIAN LEADING EDGE**

### *CANADIAN TECHNOLOGY CENTRES*

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#### ***Biomaterials***

- University of Toronto (Toronto, Ontario)
- Ottawa Heart Institute (Ottawa, Ontario)
- École Polytechnique (Montréal, Québec)
- Queen's University (Kingston, Ontario)
- University Hospital/Robarts Institute (London, Ontario)
- University of British Columbia (Vancouver, B.C.)

#### ***Medical Imaging***

- École Polytechnique (Montréal, Québec)
- Siemens/St. Boniface Imaging Centre (Winnipeg, Manitoba)
- Advanced Imaging Group (London, Ontario)
- University of Calgary (Calgary, Alberta)

#### ***Cardiovascular***

- Ottawa Heart Institute (Ottawa, Ontario)
- Cardiovascular Research Group (Calgary, Alberta)
- Institut de Cardiologie de Montréal (Montréal, Québec)
- Hôpital Sacré Coeur (Montréal, Québec)
- McMaster University (Hamilton, Ontario)

#### ***Orthopaedics/Prosthetics***

- University of Toronto (Toronto, Ontario)
- Orthopaedic Research Laboratories (London, Ontario)
- Queen's University (Kingston, Ontario)
- University Hospital (London, Ontario)
- École Polytechnique (Montréal, Québec)
- University of New Brunswick (Fredericton, N.B.)

#### ***Assistive Devices***

- ARCOR (Winnipeg, Manitoba)
- Rehabilitation Engineering Centre (Victoria, B.C.)
- University of Alberta (Edmonton, Alberta)
- University Hospital (London, Ontario)

#### ***Surgical***

- University Hospital (London, Ontario)
- University of British Columbia (Vancouver, B.C.)
- École Polytechnique (Montréal, Québec)
- St. Boniface Surgical Research Laboratory (Winnipeg, Manitoba)
- McGill University (Montréal, Québec)

Source: Consultmed and CCL Consultech Canada

## **9. COMPETITIVE CORPORATE TAXATION**

### *BUSINESS CLIMATE IN CANADA*

Canada's business climate provides the medical devices manufacturer with a receptive environment which compares favourably to other western industrialized countries. In addition to factors mentioned in the previous pages, corporate taxation, R&D tax incentives and government commitment through financial support programs all serve to attract international investors to the Canadian health-care sector.

### *CORPORATE TAXATION*

Combined federal and provincial corporate taxes are competitive with many other tax jurisdictions in the United States. The following table compares the combined federal and provincial rates of selected provinces in Canada to the combined federal and state rates of selected U.S. states.

### *COMBINED CORPORATE INCOME TAX, JULY 1, 1991*

<i>Province/State, Country</i>	<i>Combined Tax Rate</i>
Alberta, Canada	40.84%
British Columbia, Canada	39.84
California, U.S.A.	40.10
Illinois, U.S.A.	36.60
Massachusetts, U.S.A.	43.50
Minnesota, U.S.A.	40.30
New York, U.S.A.	39.90
Nova Scotia, Canada	40.84
Ontario, Canada	40.34
Québec, Canada	32.00

Source: Deloitte & Touche, A Comparison of Tax Incentives for Performing R&D in Canada and the U.S., May 1990



Micro porous coating technology for securely attaching orthopaedic implants.  
Photo courtesy of Ortech International

## 10. COMPETITIVE TAX INCENTIVES FOR R&D

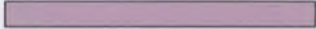
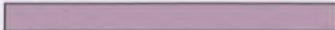





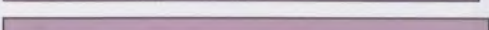
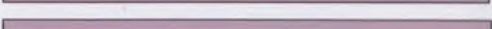

### R&D TAX INCENTIVES

The Canadian tax treatment of R&D is among the most attractive of industrialized nations. Federal incentives currently allow 100 per cent deduction for R&D expenditures in the current year as well as capital expenditures made on R&D machinery and equipment and investment tax credits (which vary according to the size of the company) on qualifying R&D expenditures incurred in Canada.

In addition, some provinces have established their own R&D tax credit legislation as a means of encouraging R&D within their jurisdictions.

A 1990 study by the Conference Board of Canada reveals that the Canadian corporate tax system provides greater overall incentive for companies to engage in R&D than do the tax systems of nine other leading industrial countries.

### A TEN-COUNTRY COMPARISON, (1989)

Country	Cost (\$)		Rank
Canada	0.657		1
Australia	0.703		2
Korea	0.805		3
France	0.813		4
United States	0.972		5
United Kingdom	1.000		6
Japan	1.003		7
West Germany	1.027		8
Italy	1.033		9
Sweden	1.040		10

*Note: Comparison based on the B-index method*

*Before tax income required to do \$1.00 worth of research*

*Source: The Conference Board of Canada Report 55-90, p. 13, May 1990*

## **11. FEDERAL GOVERNMENT SUPPORT PROGRAMS**

### *INDUSTRY, SCIENCE AND TECHNOLOGY CANADA*

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Industry, Science and Technology Canada (ISTC) is the Government of Canada's primary economic development agency. In addition to funding capital expansion, modernization, and startup projects, ISTC is also involved in promoting industrial research and development through several programs such as:

- Strategic Technologies Program
- Microelectronics Systems Development Program
- Innovation Assistance Program
- Advanced Manufacturing Technology Application Program
- Manufacturing Assessment Service

Assistance generally takes the form of a repayable or non-repayable contribution up to a maximum per cent and/or dollar cap.

### *THE NATIONAL RESEARCH COUNCIL*

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The National Research Council (NRC) is Canada's primary science and technology resource. The Council provides extensive support to private companies through IRAP, the Industrial Research Assistance program. The NRC offers the advantage of world-class scientific and engineering support without cost to firms utilizing its services. The NRC is open to various types of arrangements with Canadian-based companies:

- R&D projects co-funded by the NRC
- customized R&D projects
- specific testing and analysis
- collaborative R&D
- access to major engineering facilities and installations

### *THE MEDICAL RESEARCH COUNCIL*

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The Medical Research Council (MRC) is a government corporation dedicated to the promotion and assistance of basic, applied and clinical research in the health sciences, and in the training and development of the Canadian labour pool. In 1989-90, the Council awarded research grants of \$198 million to projects in the field.

The MRC has four types of programs to assist in defraying the direct cost of biomedical research: clinical, product development, fellowships and special projects. These programs offer assistance for individual or collaborative research activities. Grant programs are available for equipment, operations, clinical trials, product development, industrial fellowships and special projects.

Like the National Research Council, the MRC is moving toward increased collaboration with industry. A new industry/university program has been established to fund such alliances.

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### *THE NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL*

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The Natural Sciences and Engineering Research Council (NSERC) is Canada's premier federal agency responsible for the funding of university research. With its annual budget of more than \$450 million, NSERC delivers major programs covering research personnel support, operating grants, equipment grants, and strategic and targeted grants. Among NSERC's objectives is to forge closer links between the university research community and other sectors of the economy, and to promote and support targeted research in selected fields of national importance.

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### *HEALTH AND WELFARE CANADA*

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Health and Welfare Canada administers the National Health Research and Development Program, administered by aims to support scientific activities designed to provide information pertinent to the achievement of Canadian health goals. Eligible activities include research projects, studies, and demonstration and evaluation projects. Currently, particular emphasis is placed on delivery of preventative medicine, rehabilitation, communicable disease control, and risk assessment.

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### *THE WESTERN DIVERSIFICATION FUND*

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The Western Diversification Fund is administered on a regional basis by the appropriate provincial government. It provides repayable financial assistance to projects deemed strategically important to the region in terms of products, markets, technology or balance of trade. It is available through the western provinces of British Columbia, Alberta, Saskatchewan and Manitoba.

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### *THE ATLANTIC CANADA OPPORTUNITIES AGENCY*

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The Atlantic Canada Opportunities Agency is a federal program administered by the eastern provinces of Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland. It provides six types of assistance to commercial operations: loan insurance, interest buy downs, studies, innovation assistance, new facility establishment, expansion/modernization, and new product expansion.



*Photo courtesy of the National Research Council of Canada*

## **12. PROVINCIAL PROGRAMS**

Provincial programs may be used by the medical devices firm in addition to the support received from federal programs. Each province has created individual programs tailored to suit its industrial strategy. Following is a listing of some of the programs available through the provinces. More detailed information on these or any newly-created programs can be obtained from the individual provincial governments.

"ParaDigm BioTechnologies has from its first beginnings benefited from public sector co-operation. We have transferred leading-edge technology from the University of Toronto, and have received invaluable assistance from the federal and Ontario governments. Without this assistance we could not have attracted private investment capital."

Mr. Gord Rosenblatt  
ParaDigm BioTechnologies

### ***BRITISH COLUMBIA***

The B.C. Health Research Foundation supports a number of awards programs for health research in British Columbia. Emphasis is placed on the use of funds for the encouragement of clinical research projects and studies aimed at evaluating the effectiveness of health-care programs and methods of delivery.

### ***ALBERTA***

The Alberta Heritage Foundation for Medical Research (AHFMR) was established in 1979 with a \$300 million endowment from the Alberta Government. In 1988, approximately \$50 million was awarded under its various scientific programs. The Foundation funds scientific research and development through a program of grants and awards designed to recruit, support, and train a critical mass of career scientists in Alberta.

The AHFMR also administers the two-tiered Technology Transfer Program, which assists medical researchers and firms in their efforts to commercialize promising research results. There are also a variety of assistance programs for marketing, training, and specific research projects in areas such as electronics, biotechnology, and advanced industrial materials.

### ***ONTARIO***

The Province of Ontario has developed a series of programs that can assist business in a number of ways such as tax incentives, project financing, small business advice, industry/university research programs, etc. The Government of Ontario has allocated \$131 million to promote R&D, and \$57 million to promote manufacturing activities.

### ***QUÉBEC***

Funding for R&D and capital investment can be obtained through la Société de développement industriel du Québec (SDIQ). SDIQ programs can take the form of interest-free or interest-reduced loans and, in some cases, may take the form of non-repayable contributions.

In addition, the province has established a \$300 million Technology Development Fund, a program designed to provide financing for up to 50 per cent of R&D project costs. The fund requires that submissions be made by R&D consortia which include two or more companies and at least one university.

The Government of Québec, in addition to providing training grants and subsidies, has recently set up a highly successful training tax credit which is very similar to its R&D tax credit program.

### ***ATLANTIC CANADA***

Each of the Atlantic provinces has established programs to assist the private sector with industrial or technology-based projects. These include repayable contributions, interest-free or interest-reduced loans, tax incentives, as well as business consulting.

There are also a number of R&D organizations in Atlantic Canada, such as the Research Council of Nova Scotia, which provide technical facilities and services to the private sector.



### **13. FAVOURABLE REGULATORY ENVIRONMENT**

#### *THE REGULATORY ENVIRONMENT CLIMATE*

The regulatory climate in Canada, structured to ensure the safety and efficacy of products reaching the market, is somewhat simpler than that of the United States and can provide time savings to those firms wishing to advance their plans at an accelerated pace. The regulations governing medical devices in Canada are administered at the federal level by the Health Protection Branch of Health and Welfare Canada. There are no individual provincial health and safety requirements.

For the great majority of devices sold in Canada, the manufacturer or distributor must submit a product registration or notification to the Health Protection Branch within 10 working days of the first sale in Canada. The manufacturer must have adequate test results available to prove the product is safe and effective, and the product's labelling must contain the information specified in the Canadian Medical Devices Regulations. Accurate records must also be maintained so that devices may be tracked in the event of a recall.

Products intended to be implanted for more than 30 days, as well as other certain specified devices, require a formal pre-market review by the Health Protection Branch before they can be sold in Canada. In most cases this should be completed in approximately six months.

Canada's regulatory system is well-suited for global marketing: medical devices manufactured in Canada for export do not require domestic approval as long as the product is not sold in Canada. The product must be labelled "for export only" and the exporter must certify that the products comply with regulations of the importing country.

"The Canadian regulatory environment is less cumbersome than that of the U.S.A., thereby allowing us to launch new products into Canada and world markets more quickly."

Mr. Steve Hayter  
ADI Diagnostics

"The regulatory environment was a factor in deciding to give the Canadian Company an international mandate."

Mr. H. Vienneau  
Mallinckrodt Medical Inc.



*Photo courtesy of Université Laval*

## 14. COST-EFFECTIVE NORTH AMERICAN INFRASTRUCTURE

- Canada received the highest rating by the World Economic Forum for transportation, communications and power supply infrastructure among the G-7 countries in the 1990 survey of international business leaders.
- Canada has one of the most reliable and sophisticated telecommunications systems in the world, featuring integrated, privately owned, direct-dial facilities with competitive prices across Canada and the United States. The typical charge for a five-minute direct-dial call during business hours is:

Toronto to New York	C \$ 2.55	Toronto to Munich	C \$ 9.08
Montréal to Los Angeles	C \$ 2.80	Montréal to England	C \$ 6.71
Vancouver to San Francisco	C \$ 2.80	Vancouver to Japan	C \$ 9.08
Calgary to Los Angeles	C \$ 3.15	Calgary to Singapore	C \$ 6.71
Winnipeg to Miami	C \$ 3.15	Winnipeg to Sweden	C \$ 6.71

- There are common-carrier computer and electronic mail networks that span the Canada/U.S. border and cover the entire continent.

### FLIGHT TIMES – MAJOR CANADIAN CITIES TO U.S. DESTINATIONS

	VANCOUVER	CALGARY	WINNIPEG	TORONTO	MONTREAL	HALIFAX
BOSTON	7:02	6:40	6:50	1:34	1:10	1:24
LOS ANGELES	2:45	3:08	2:58	5:15	7:30	7:58
NEW YORK	7:20	6:50	6:32	1:26	1:21	2:15
SAN FRANCISCO	2:10	3:30	6:40	5:23	6:05	8:15
SEATTLE	:50	2:15	4:45	6:55	6:20	10:05
DALLAS	8:15	4:25	4:30	2:00	4:30	4:38
ATLANTA	11:25	8:00	5:30	3:50	4:30	5:14
WASHINGTON	10:00	9:00	5:00	2:00	3:00	3:30

*Note: All times are approximate and subject to change  
Source: Investment Canada, November, 1991*



*Lauren Nightingale, 3 1/2 years old, below-elbow amputee using the world's smallest myoelectric hand  
Photo courtesy of the Hugh MacMillan Rehabilitation Centre*

## MEDICAL DEVICES CANADIAN CAPABILITIES

Organization	Nature of Business	Current Activities	Partnering Interests
<b>Alliance Medical Inc.</b> Sales Volume: <\$5 M Employees: 25 Facilities: 7,500 sq.ft.	Manufacturer of specialized medical devices, notably a portable battery-operated, real-time ultrasound unit with a variety of transducers.	Ultrasound scanner. Needleless jet injector. Non invasive blood pressure monitor. Pulse oximeter.	Alliances with Europe, notably Sweden, Finland, Norway and Denmark.
<b>ARCOR</b> Sales Volume: <\$1 M Employees: 17 Facilities: 28,000 sq.ft.	Designs and develops products for independent living for seniors and persons with disabilities.	ARCORAIL (TM). Powered Wheel. Integrated bathing system for seniors. Patient transfer device.	Distribution or OEM arrangement in Europe. Licensing. Co-research & development.
<b>Brytech Inc.</b> Sales Volume: \$600,000-\$1M Employees: 20 Facilities: n/a	Specializes in health care monitoring and telecommunications.	Product improvement on manufactured products. Exploratory research for new products.	Joint venture, product development, collaborative R&D, telemetry. Licensing
<b>CME Telemetry Inc.</b> Sales Volume: \$3 M Employees: 30 Facilities: 12,000 sq.ft.	Research, development and manufacturing company specializing in medical diagnostic devices, telemetry systems and custom instrumentation.	Physiologic amplifiers. RF telemetry monitoring. NIR Spectrophotometers.	Collaborative R&D, optical blood gas analyzer. Joint product development in EEG Telemetry. Licensing.
<b>Duoject Medical Systems</b> Sales Volume: <\$5 M Employees: 10 Facilities: n/a	Dedicated to the advancement of its multi-dose and unit dose injectable drug delivery technologies.	Licensing drug delivery and I.V. infusion systems. Delivery systems complementary to the "Vari Vial" concept. Automatic reconstitution & injection of drug components.	Pharmaceutical companies requiring drug-packaging systems & those specializing in glass R&D.
<b>Galenica Inc.</b> Sales Volume: <\$5 M Employees: 50 Facilities: 18,000 sq.ft.	Specializes in the research & development of medical disposable products.	Vaginal specula. Anoscopes & amniotomes. Injection moulding.	Technology transfer. Licensing & marketing alliances.
<b>Germiphene Corporation</b> Sales Volume: <\$1 M Employees: 45 Facilities: 21,000 sq.ft.	Manufactures and distributes specialty medical products to the dental, medical, hospital, pharmacy, OTC and veterinarian markets.	Oral cancer diagnostic, disinfectants, sterilants, fluorides for home & office, skin care, dental pharmaceuticals, topical anesthetics.	Joint ventures focusing on: products containing chlorhexidine gluconate; antimicrobial mouth rinses, fluoride gels.
<b>Immunocorp</b> Sales Volume: <\$5 M Employees: 24 Facilities: 12,500 sq.ft.	Canada's largest independent manufacturer and distributor of immunodiagnostic and microbiology products.	IRMA kits. RIA kits. ELISA assays.	Distribution in Europe. Joint product development.

Organization	Nature of Business	Current Activities	Partnering Interests
<b>Instatel Inc.</b> Sales Volume: >\$1 M Employees: 35 Facilities: n/a	Specializes in the development, manufacturing & marketing of high technology products.	Watch-mate (R). RF transmitter / receiver. Electronic patient wandering system.	Alliances with Europe, notably the U.K. Licensing. Seeking companies that manufacture nurse call.
<b>International Telepresence</b> Sales Volume: <\$5 M Employees: 10 Facilities: 15,000 sq.ft.	Develops systems for 3-dimensional video imaging for Minimally Invasive Surgery & Virtual Reality projects.	A single camera 3-dimensional viewing system for use in thoracic, abdominal or knee surgery; and possibly for brain, cosmetic, ear/nose/throat procedures.	Joint marketing arrangements. Licensing. Joint product development.
<b>Lightwave Medical Industries</b> Sales Volume: <\$500,000 Employees: 11 Facilities: 1,600 sq.ft.	Develops and manufactures instruments and control switches based on light for use in the operating room.	Light controlled hand held disposable electrosurgical pencil. Light activated photonic switches & controllers. Fibre optic sensor leads.	Joint venture. Licensing of proprietary technology for photonic switching. Joint product development.
<b>Millenium Biologix Inc.</b> Sales Volume: <\$1 M Employees: 10 Facilities: 3,000 sq.ft.	Specializes in diagnostic and therapeutic products for treatment of bone diseases, based on novel proprietary artificial bone analog.	Osteologic analytical kit. Resorbable bone biomaterial coating for implants. Novel protein crystallization system.	Strategic partner on product development and marketing front.
<b>Northern Light Technologies</b> Sales Volume: >\$800,000 Employees: 10 Facilities: n/a	Specializes in the manufacturing & distribution of a phototherapy device designed for those who suffer from seasonal affective disorder.	'SadElite'. Other phototherapy devices (dawn simulator, etc.) Battery recharger.	Agent/distributors servicing medical/health care professionals.
<b>Pro-Western Plastics Ltd.</b> Sales Volume: >\$10 M Employees: 100 Facilities: 100,000 sq.ft.	An injection molding company which has developed expertise in medical & laboratory waste containers.	Complete array of medical waste containers (sharps, anatomical, chemotherapy, etc.)	Distribution of existing products. Licensing. Joint product development.
<b>R. Laborie Surgical Ltd.</b> Sales Volume: <\$1.7 M Employees: 94 Facilities: 40,000 sq.ft.	Specializes in endoscope accessories; computerized urodynamic products for diagnostic purposes.	Urodynamic recorders. Pressure sensitive recording devices (hardware & software) UDS-Nicki 2 channel computerized urodynamic analyser.	Joint venture product development. European distribution. Canadian manufacture of products.
<b>Sandstrom Trade &amp; Technology Inc.</b> Sales Volume: n/a Employees: 3 Facilities: 1,750 sq.ft.	Specializes in non-invasive high precision localization precision guidance and immobilization medical technologies.	Developments within MRI-Imaging and Stereotactic fractionated high precision radiation therapy (SRT).	European distribution. Collaborative research in guidance systems for diagnostic imaging and therapeutic treatments.

Organization	Nature of Business	Current Activities	Partnering Interests
<b>Starplex Scientific</b> Sales Volume: >\$10 M Employees: 150 Facilities: n/a	Manufacturer of biological specimen collection and transportation products.	Injection moulding & blow moulding of plastic lab supplies. Biological collection systems. Histoplex (Histology containgers).	Joint product development. Licensing.
<b>Telstat Electronics Inc.</b> Sales Volume: <\$500,000 Employees: 6 Facilities: 2,000 sq.ft.	Develops and manufactures a personnel security system for medical staff working alone at risk.	Telstat's security system utilizes a patented wrist transmitter; the system utilizes existing telephone lines	Joint market and product development, to make Telestat's system compatible with local requirements.
<b>Terra Nova Biotechnology Co. Ltd.</b> Sales Volume: <\$500,000 Employees: 7 Facilities: 800 sq.ft.	Develops diagnostic kits and specialized reagents for use in transplantation & studies of immune disorder diseases.	HLA-DP Epitope typing kits. Genetic testing for disputed paternity. Custom monoclonal anitbodies.	Marketing & distribution . Licensing and packaging. Collaborative product development.
<b>Terray Corporation</b> Sales Volume: \$350,000 Employees: 5 Facilities: n/a	Specializes in fracture management, working with the orthopaedic community.	Fracture fixation implants and instruments. Auto CAD, CAD, CNC Machining cost effective prototyping.	Seeking companies interested in acquiring additional fracture products for distribution, while working with Terray Corporation during the development process.
<b>Thoratec Laboratories Corporation.</b> Sales Volume: <\$5 M Employees: 40 Facilities: 25,000 sq.ft. - Berkeley 800 sq.ft. - Ottawa	Specializes in vascular grafts and ventricular assist devices using its own proprietary blood contacting polyurethane technology.	Vascular grafts. Ventricular assist device.	Vascular graft distributors. Negotiating with potential distributors with experience in the medical device sector.
<b>Vista Laboratories Ltd.</b> Sales Volume: <\$500,000 Employees: 5 Facilities: 5,000 sq.ft.	Develops and manufactures products for the field of microbiology.	Isoplater 80, an automatic petri dish streaking machine; automatically loads, streaks and stacks up to 180 pre-inoculated petri dishes per hour.	Joint market development.

## CANADIAN MEDICAL DEVICES TECHNOLOGY / COMPANY MATRIX

Technology / Product	Company	Interests*
<b>Monitoring Devices</b> Patient monitoring (respiratory/cardio) Telemetric monitoring system Wandering patient tracking system Healthcare personnel security system	Brytech Inc. CME Telemetry Instatel Inc. Telstat Electronics	JV, L, R&D JV, L, R&D JV, L, R&D JV, R&D
<b>Diagnostic Kits &amp; Devices</b> Ultrasound scanners HLA-DP donor/recipient typing Non-invasive blood chemistry Oral cancer diagnostic kit (dental) 3-D Imaging systems Urodynamic testing & analysis Osteologic analysis (bone function) Radioimmunoassay kits	Alliance Medical Terra Nova Biotechnology CME Telemetry Germiphene Corporation International Telepresence Laborie Surgical Inc. Millenium Biologix Immunocorp	JV, MD JV, L, R&D, MD JV, L, MD JV, R&D, MD JV, R&D, MD JV, MD JV, MD TT, L, JV, R&D
<b>Instrumentation</b> NIR spectrometers Phototherapy device (S.A.D.) Fiber-optic sensors	CME Telemetry Northern Light Technologies Lightwave Medical	JV, L, R&D, MD JV, MD JV, L, R&D
<b>Laboratory Equipment &amp; Supplies</b> Biological specimen collection systems Medical-biological waste containers Automated petri dish streaking system ELISA assays	Starplex Scientific Pro-Western Plastics Vista Laboratories Immunocorp	JV, L, MD JV, L, MD JV, L, MD JV, L, MD
<b>Surgical Equipment, Devices, Implantables</b> 3-D endoscopic systems Disposable devices/instruments Electro-surgical pencil Guidance & immobilization systems (for stereotatic neurosurgery) Vascular grafts Ventricular assist devices Resorbable bone biomaterials Fracture fixation devices & fracture management	International Telepresence Galenica Inc. Lightwave Medical Sandstrom Technology  Thoratec Laboratories Thoratec Laboratories Millenium Biologix Terray Corporation	JV, L, R&D, MD TT, L, MD JV, L, R&D JV, R&D, L  JV, R&D, MD JV, R&D, MD JV, MD JV, TT, R&D
<b>Drug Delivery Systems &amp; Therapeutics</b> Multi-dose drug delivery system Pre-filled syringe system Passive Hyperimmune Therapy (PHT) (proprietary treatment for AIDS)	Duoject Medical Systems Duoject Medical Systems Medicorp Inc.	JV, L, MD JV, L, MD TT, L, R&D
<b>Rehabilitation &amp; Mobility Devices</b> Bed rails & wheelchair accessories Speech simulator Ultrasonic mobility device for visually impaired Currency reader for visually impaired	ARCOR Brytech Inc. Brytech Inc. Brytech Inc.	JV, L, MD JV, L, R&D, MD JV, L, MD JV, L, MD

\*L = Licensing  
 TT = Technology transfer  
 JV = Joint Venture  
 MD = Marketing Distribution  
 R&D = Collaboration

## ***ALLIANCE MEDICAL INC.***

3610 Valiquette  
Ville St-Laurent  
Montreal, Quebec  
CANADA H4R 1B7

Telephone: (514) 745-3777  
Facsimile: (514) 337-9242

Mr. Karim Menassa, President

### **NATURE OF BUSINESS**

Alliance Medical Inc. (AMI) is a manufacturer of highly specialized medical devices. Its chief product is a portable, battery-operated, real-time ultrasound unit with a variety of transducers, for use by medical or veterinary practitioners.

### **MAJOR ACHIEVEMENTS**

AMI has developed a worldwide market niche both in human and veterinary applications for its ultrasound units.

### **COMPANY BACKGROUND**

AMI is a wholly-owned Canadian company which was established in 1989. AMI's offices provide special on-site training sessions in the maintenance and repair of its units for all its distributors.

### **COMPANY PROFILE**

- Sales Volume: <\$5 million
- R&D Expenditures: 20% of gross sales
- Employees: 25
- Facilities: 7,500 sq. ft.
- Key Alliances: Open to negotiations

### **CURRENT ACTIVITIES**

- Ultrasound scanner
- Needleless jet injector
- Non invasive blood pressure monitor
- Pulse oximeter

### **PARTNERING INTERESTS**

- Alliances with Europe, notably Sweden, Finland, Norway and Denmark
- Human Medical Devices companies with interests in X-ray and diagnostic technologies



## **ARCOR**

265 Notre Dame Avenue  
Winnipeg, Manitoba  
CANADA R3B 1N9

Telephone: (204) 943-9400  
Facsimile: (204) 943-4088

Mr. Brian D. Kan, Manager, Business Development

### **NATURE OF BUSINESS**

ARCOR (Canadian Aging and Rehabilitation Product Development Corporation) has a mandate to design and develop products for independent living for seniors and persons with disabilities.

### **MAJOR ACHIEVEMENTS**

- 3 patents covering major product lines
- Ability to bring products to market faster due to the company's unique interactions between eventual users and design and manufacturing teams.

### **COMPANY BACKGROUND**

ARCOR is a not-for-profit corporation established in 1989, opened in 1990 and scheduled for privatization in 1997.

### **COMPANY PROFILE**

- Sales Volume: <\$1 million
- Employees: 17
- Facilities: 28,000 sq. ft.
- Key Alliances: Centre on Aging, University of Manitoba  
Canadian Industrial Innovation Centre, Waterloo  
Gerontology Research Centre, Simon Fraser University  
Engineering and Applied Sciences Industrial Affiliates, University of Manitoba  
Medical Rehab Engineering Dept. , Health Sciences Centre, Winnipeg

### **CURRENT ACTIVITIES**

- ARCORAIL™ is an innovative bed rail with accessories for home and institutional use. In distribution in Canada and the USA.
- Powered Wheel is a reconfigured innovative power train for wheelchairs, mobility devices and certain industrial applications. In distribution internationally.
- Integrated bathing system for seniors and persons with disabilities.
- An innovative patient transfer device is in final-stage development.

### **PARTNERING INTERESTS**

- Distribution or OEM arrangement in Europe
- Licensing of proprietary technology and products
- Co-research and development
- Contract development

**BRYTECH INC.**

28 Concourse Gate  
Suite 102  
Nepean, Ontario  
CANADA K2E 7T7

Telephone: (613) 727-5800  
Facsimile: (613) 727-5130

Mr. Earl L. Bryenton, President

**NATURE OF BUSINESS**

Brytech Inc. specializes in health care monitoring and telecommunications. The company provides consulting engineering and management services that are complemented by its capabilities in development and manufacturing of products for telecommunications and the health care field.

**MAJOR ACHIEVEMENTS**

- "Simulated Speech Simulators", world-wide distribution.
- "Sensory 6", an ultrasonic mobility device for the visually impaired with world-wide distribution.
- "Note Teller", an optical reader of U.S. bank notes for the visually impaired.
- "Canadian Bank Note Reader (CBR)", optical reader of Cdn. bank notes for blind and visually impaired people.
- "Health Core Monitor", optical health care monitor for respiration, cardiac and other health signs.

**COMPANY BACKGROUND**

Brytech Inc. is a wholly owned Canadian company which was incorporated in 1982.

**COMPANY PROFILE**

- Sales Volume: \$600,000 - \$1 million
- R&D Expenditures: \$260,000
- Employees: 20
- Facilities: n/o
- Key Alliances: Carleton University, Ottawa Heart Institute, Gondolf Technologies, Bell Northern Research, NRC, Mitel, OCRI

**CURRENT ACTIVITIES**

- Product improvement on manufactured products.
- Exploratory research for new products.

**PARTNERING INTERESTS**

- Joint venture, product development, collaborative R&D, telemetry.
- Licensing present products and technology.

## ***CME TELEMETRIX INC.***

560 Parkside Drive  
Waterloo, Ontario  
CANADA N2L 5Z4

Telephone: (519) 886-8440  
Facsimile: (519) 886-8442

Mr. Allen Nichols, V.P. Marketing

### **NATURE OF BUSINESS**

CME Telemetrix Inc. is a research, development and manufacturing company specializing in medical diagnostic devices, telemetry systems and custom instrumentation.

### **MAJOR ACHIEVEMENTS**

CME Telemetrix Inc. has developed and manufactured innovative products, such as optical systems and non-invasive analysis technology, in a variety of joint venture and contract arrangements with the medical device industry and in association with leading university and hospital research centres.

### **COMPANY BACKGROUND**

CME Telemetrix Inc. is an incorporated and privately owned company which was originally a spin-off from the University of Waterloo in 1976 and then reorganized in 1988. The company has well equipped optical, electronic, mathematics and software development laboratories including test equipment for both visible and near infra red systems.

### **COMPANY PROFILE**

- Sales Volume: \$3 million
- R&D Expenditures: n/a
- Employees: 30
- Facilities: 12,000 sq. ft.
- Key Alliances: 70% exports with the USA  
20% exports with Asia/Pacific

### **CURRENT ACTIVITIES**

- Physiologic amplifiers
- RF telemetry monitoring
- NIR Spectrophotometers
- Transcutaneous energy transfer & telemetry
- Spread spectrum RF systems for EEG & ECG
- Chemometrics laboratory optical products
- Non-invasive blood chemistry

### **PARTNERING INTERESTS**

- Collaborative R&D, optical blood gas analyzer and other products.
- Joint product development in EEG Telemetry.
- Licensing current technologies in Europe.

## **DUOJECT MEDICAL SYSTEMS**

P.O. Box 600  
305 Knowlton Road  
Lac Brome, Quebec  
CANADA JOE 1V0

Telephone: (514) 242-1373  
Facsimile: (514) 242-1423

Mr. David Reynolds, President

### **NATURE OF BUSINESS**

Duoject Medical Systems is dedicated to the advancement of its multi-dose and unit dose injectable drug delivery technologies.

### **MAJOR ACHIEVEMENTS**

- Duoject Medical Systems has developed an extensive line of syringe-based pre-filled small volume parenteral drug delivery systems.
- The company is the only research and development firm licensing a universal unit and multi-dose syringe-based delivery concept that can effectively differentiate injectable drug products via proprietary packaging.
- Duoject Medical Systems' patent-protected (issued & pending) drug delivery technology has made available the only syringe system that can be pre-filled on existing standard vial filling and packaging machinery.

### **COMPANY BACKGROUND**

Duoject Medical Systems is a privately owned corporation which was founded in 1985.

### **COMPANY PROFILE**

- Sales Volume: <\$5 million
- R&D Expenditures: n/a
- Employees: 10
- Facilities: n/a
- Key Alliances:
  - 20% exports with the USA
  - 80% exports with European multi-national pharmaceutical companies

### **CURRENT ACTIVITIES**

- Licensing drug delivery and I.V. infusion systems
- Delivery systems complementary to the "Vari Vial" concept
- Development of double chamber syringe systems
- Advancement in components design
- Development of syringe drive design
- Development of systems tailored to specific product demands

### **PARTNERING INTERESTS**

- European pharmaceutical companies that require drug-packaging systems and those specializing in glass R&D.

## ***GALENICA INC.***

12805 rue du Parc  
Mirabel, Quebec  
CANADA J7J 1P3

Telephone: (514) 437-3111  
Facsimile: (514) 430-1467

Dr. Jacques R. Marcotte, President

### **NATURE OF BUSINESS**

Galenica Inc. specializes in the research and development of medical disposable products including vaginal specula, anoscopes and amniotomes, medical institutional products including shower/cammade chairs and hampers.

### **MAJOR ACHIEVEMENTS**

- Award for Best Customer service from a major medical dealer in the USA.
- Several financial programs offered by governments due to Galenica's ability to successfully develop export markets.

### **COMPANY BACKGROUND**

Galenica Inc. is a privately-owned Canadian corporation which was founded in 1982.

### **COMPANY PROFILE**

- Sales Volume: <\$5,000,000
- R&D Expenditures: n/a
- Employees: 50
- Facilities: 18,000 sq. ft.

### **CURRENT ACTIVITIES**

- Injection Moulding

### **PARTNERING INTERESTS SOUGHT**

- Technology transfer, licensing and marketing alliances.

## **GERMIPHENE CORPORATION**

1379 Colborne St. East  
Brantford, Ontario  
CANADA N3T 5V7

Telephone: (519) 759-7100  
Facsimile: (519) 759-1625

Mr. Robert Bill, Marketing Manager

### **NATURE OF BUSINESS**

Germiphene Corporation manufactures and distributes a wide variety of specialty medical products to the dental, medical, hospital, pharmacy, OTC and veterinary markets.

### **MAJOR ACHIEVEMENTS**

- Winner of a gold award at the 1989 National Association of Container Distributors packaging awards competition.
- Increasing demand for Germiphene products to be private labeled.

### **COMPANY BACKGROUND**

Germiphene Corporation is wholly owned and operated by its president, Ms. Leslie Drake and has been setting a standard of excellence in the manufacture and distribution of products for health care industries for nearly 40 years.

### **COMPANY PROFILE**

- Sales Volume: <\$1 million
- R&D Expenditures: n/a
- Employees: 45
- Facilities: 21,000 sq. ft.
- Key Alliances: 50% exports with the USA  
16% exports with Europe  
34% exports with Asia/Pacific

### **CURRENT ACTIVITIES**

- Oral cancer diagnostics, disinfectants, sterilants, fluorides for home & office, skin care, dental pharmaceuticals, topical anaesthetics.
- Prophylactic products, oral rinses, gel trays

### **PARTNERING INTERESTS**

- Working with leading edge companies in other countries on new dental sundries and technology, focusing on:
  - products containing chlorhexidine gluconate
  - antimicrobial mouth rinses
  - alternative sterilizing solutions to Glutaraldehyde
  - new technology in fluoride gels
  - on-going research on time release dental products for oral usage

## **IMMUNOCORP**

5800 Royalmount  
Montreal, Quebec  
CANADA H4P 1K5

Telephone: (514) 733-1900  
Facsimile: (514) 733-1212

Dr. Pierre Du Ruisseau, V.P. & General Manager

### **NATURE OF BUSINESS**

Immunocorp is Canada's largest independent manufacturer and distributor of immunodiagnostic and microbiology products.

### **MAJOR ACHIEVEMENTS**

- Developed diagnostic tests for TSH, LH, FSH, HCG, Prolactin, etc.

### **COMPANY BACKGROUND**

Immunocorp was founded in 1972 and is a wholly-owned subsidiary of Medicorp Sciences Inc.

### **COMPANY PROFILE**

- Sales Volume: <\$5 million
- R&D Expenditures: n/a
- Employees: 24
- Facilities: 12,500 sq. ft.
- Key Alliances: 12% exports with the USA  
5% exports with Europe  
3% exports with Asia/Pacific  
2% exports with South America

### **CURRENT ACTIVITIES**

- IRMA, immunoradiometric kits
- RIA, radioimmunoassay kits
- ELISA assays

### **PARTNERING INTERESTS**

- Distribution of RIA, IRMA and ELISA kits.
- Joint product development of new immunodiagnostic products.

## ***INSTANTEL INC.***

362 Terry Fox Drive  
Kanata, Ontario  
CANADA K2K 2P5

Telephone: (613) 592-4642  
Facsimile: (613) 592-4296

Mr. Steve Midlenberger, Sr. Marketing & Sales

### **NATURE OF BUSINESS**

InstanTEL was founded in 1982 and specializes in the development, manufacturing and marketing of high technology products to the resource, industrial, commercial and institutional markets.

### **MAJOR ACHIEVEMENTS**

- InstanTEL's monitoring system has proven to be simple and easy to install, without any false alarms. The monitoring system is one of the leading technologies of its kind in North America.

### **COMPANY BACKGROUND**

InstanTEL is a privately-owned company which was incorporated in 1982. Having its own manufacturing facility guarantees complete control over product quality. InstanTEL products are sold in over 50 countries around the world.

### **COMPANY PROFILE**

- Sales Volume: >\$1 million
- R&D Expenditures: \$120k
- Employees: 35
- Facilities: n/a
- Key Alliances: 95% exports within North America

### **CURRENT ACTIVITIES**

- Watch-mate® used in nursing homes and hospitals
- RF transmitter/receiver
- Electronic patient wandering system

### **PARTNERING INTERESTS**

- Alliances with Europe, notably the U.K.
- North American distribution channel for EEC companies
- Willing to license technology to European companies
- Seeking companies that manufacture nurse call



## **INTERNATIONAL TELEPRESENCE**

648 West 6th Avenue  
Vancouver, British Columbia  
CANADA V5Z 1A3

Telephone: (604) 873-3300  
Facsimile: (604) 874-0326

Mr. Nigel Horsley, Vice President, Corporate Communications

### **NATURE OF BUSINESS**

International Telepresence develops systems for 3-dimensional video imaging for Minimally Invasive Surgery (MIS) and Virtual Reality projects.

### **MAJOR ACHIEVEMENTS**

- 8-year track record of twin camera sales in sub-sea, civil engineering, space and aerospace, and hazardous materials handling
- ISO 9000 in progress

### **COMPANY BACKGROUND**

International Telepresence is a publicly traded company on the Canadian Dealing Network.

### **COMPANY PROFILE**

- Sales Volume: <\$500,000
- R&D Expenditures: n/a
- Employees: 10
- Facilities: 15,000 sq. ft.
- Key Alliances: University of British Columbia  
Simon Fraser University

### **CURRENT ACTIVITIES**

International Telepresence is currently developing a single camera 3-dimensional viewing system designed to attach quickly to existing standard endoscope systems. This unique new technology makes surgery safer, cheaper and more efficient. The Telepresence system can be coupled to existing minimally invasive scopes as small as 1.9mm. While the company's 3-D imaging system will be generally used in thoracic, abdominal or knee surgery, there is interest in using it for brain, cosmetic, as well as ear, nose and throat procedures.

### **PARTNERING INTERESTS**

- Joint marketing arrangement in Europe
- Licensing of technology for defined applications
- Joint product development

## **LIGHTWAVE MEDICAL INDUSTRIES**

2065 West 4th Avenue  
Vancouver, British Columbia  
CANADA V6J 1N3

Telephone: (604) 731-8229  
Facsimile: (604) 739-9283

Mr. John Kidder, CEO

### **NATURE OF BUSINESS**

Lightwave Medical Industries develops and manufactures instruments and control switches based on light for use in the operating room.

### **MAJOR ACHIEVEMENTS**

- Three patents covering the technology
- ISO 9000 in progress

### **COMPANY BACKGROUND**

Lightwave Medical Industries is a private company, incorporated in 1990.

### **COMPANY PROFILE**

- Sales Volume: <\$500,000
- R&D Expenditures: \$650,000 - 93/94
- Employees: 11
- Facilities: 1,600 sq. ft.
- Key Alliances: R&D testing and clinical trials facility at the Vancouver General Hospital

### **CURRENT ACTIVITIES**

- Light controlled hand held disposable electrosurgical pencil
- Light activated photonic switches and controllers
- Fibre optic sensor leads (in development)
- Reusable electrosurgical pencil (in development)

### **PARTNERING INTERESTS**

- Joint venture for manufacture and marketing in Europe
- Licensing of proprietary technology for photonic switching
- Joint product development for new controllers for laparoscopy and medical sensors.

## **MEDICORP INC.**

5800 Royalmount  
Montreal, Quebec  
CANADA H4P 1K5

Telephone: (514) 733-1900  
Facsimile: (514) 733-1212

Dr. Pierre du Ruisseau, Vice-President R&D

### **NATURE OF BUSINESS**

Medicorp Inc. has the worldwide rights to passive hyperimmune therapy (PHT), a patented treatment for AIDS. Medicorp Inc. also has the rights to a break-through genetic engineering technology that utilizes mismatch-repair enzyme inhibition to produce *in vivo* recombinants. Patents, applied for worldwide, will cover the production of hybrid species from cells.

### **MAJOR ACHIEVEMENTS**

- Immupath™

### **COMPANY BACKGROUND**

Medicorp Inc. was founded in 1985, as a wholly-owned subsidiary of Medicorp Sciences Inc.

### **COMPANY PROFILE**

- Sales Volume: <\$1 million
- R&D Expenditures: n/o
- Employees: 5
- Facilities: n/o
- Key Alliances: 100% exports with the USA

### **CURRENT ACTIVITIES**

- A break-through genetic engineering technology that utilizes mismatch-repair enzyme inhibition to produce *in vivo* recombinants.

### **PARTNERING INTERESTS**

- Technology transfer (inwards): new technology in molecular biology, genetic engineering, monoclonal antibodies.
- Technology for licensing (outwards): passive hyperimmune therapy for the treatment of AIDS and ARC (*vide supra*) and mismatch repair inhibition genetic engineering (*vide supra*).
- Collaborative research: mismatch repair genetic engineering.
- Joint product development: passive hyperimmune therapy for the treatment of AIDS and ARC.

## **MILLENIUM BIOLOGIX INC.**

785 - MidPark Drive  
Suite 200  
Kingston, Ontario  
CANADA K0H 1S0

Telephone: (613) 389-6565  
Facsimile: (613) 389-6625

Mr. Sydney M. Pugh, President

### **NATURE OF BUSINESS**

Millenium Biologix Inc. specializes in diagnostic and therapeutic products for treatment of bone diseases, based on novel proprietary artificial bone analog (bone biomaterial).

### **MAJOR ACHIEVEMENTS**

- Assembly of a world-class research and development team and network focused on development of biomaterials-based products for bone diseases.
- Successful launch of first product - osteologic™.

### **COMPANY BACKGROUND**

Millenium Biologix Inc. is a privately owned Ontario corporation which was incorporated in 1992, and is an equal partnership between Sydney Pugh and Timothy Smith.

### **CORPORATE PROFILE**

- Sales Volume: <\$1 million
- R&D Expenditures: \$350,000 (1996 estimate)
- Employees: 10
- Facilities: 3,000 sq. ft.
- Key Alliances: 75% exports with the USA  
20% exports with Europe  
5% exports with Asia/Pacific

### **CURRENT ACTIVITIES**

- Osteologic analytical kit based on proprietary bone biomaterial for assessing bone cell function in new drug R&D programs and clinical trials; tests bone resorption and growth. Also in the process of planning a diagnostic test kit for 1995/96.
- Resorbable bone biomaterial coating for implants.
- Novel protein crystallization system.

### **PARTNERING INTERESTS**

- European pharmaceutical/biotechnology company as a strategic partner on product development and marketing front. Millenium Biologix can bring approximately \$1 million Cdn. investment if needed, plus a strong product development capability in multi disciplinary advanced biomaterials.

## **NORTHERN LIGHT TECHNOLOGIES**

3070 Brabant Marineau  
St. Laurent, Quebec  
CANADA H4S 1K7

Telephone: (514) 335-1763 or 1-800 263-0066  
Facsimile: (514) 335-7764

Mr. Jae Rann, V.P.

### **NATURE OF BUSINESS**

Narthem Light Technologies specializes in the manufacturing and distribution of a phototherapy device, the 'SadElite'. Designed for those who suffer from seasonal affective disorder (S.A.D.), a type of depression, sleep-wake disorders, and jet lag.

### **MAJOR ACHIEVEMENTS**

Narthem Light's proprietary Phototherapy device has outperformed competing units in clinical tests conducted in various hospitals in Canada, and is the best-selling phototherapy device in North America.

### **COMPANY BACKGROUND**

Narthem Light Technologies is a privately-owned Canadian corporation which was founded in 1990. Its current clientele includes North American healthcare professionals such as psychiatrists, psychologists, social workers and family physicians.

### **COMPANY PROFILE**

- Sales Volume: \$1,000,000
- Employees: 10
- Facilities: n/a
- Key Alliances: Narthem Light has been marketing directly in the U.S. and Canada with sales being directly to the health-care professional and the end-user.

### **CURRENT ACTIVITIES**

- Other phototherapy devices (e.g. dawn simulator, etc.)
- Battery recharger

### **PARTNERING INTERESTS**

- Agent/distributors servicing medical/health care professionals, particularly psychiatrists, psychologists and other mental health care professionals in Narthem European countries.

## **PRO-WESTERN PLASTICS LTD.**

P.O. Box 261  
30 Riel Drive  
St. Albert, Alberta  
CANADA T8N 1N3

Telephone: (403) 459-4491  
Facsimile: (403) 460-9727

Mr. Allan J. Adolph, Director, Sales & Marketing

### **NATURE OF BUSINESS**

Pro-Western is a state of the art injection molding company which has developed expertise in the area of medical and laboratory waste containers.

### **MAJOR ACHIEVEMENTS**

- Facility has state of the art high speed injection moulding equipment and toolage.
- ISO certification, 1994
- Expertise in many other areas of injection moulding containers for consumer and food use.

### **COMPANY BACKGROUND**

Pro-Western is a privately-owned corporation that commenced operations in 1969.

### **COMPANY PROFILE**

- Sales Volume: >\$10 million
- R&D Expenditures: n/a
- Employees: 100
- Facilities: 100,000 sq. ft.

### **CURRENT ACTIVITIES**

- Complete array of medical waste containers (sharps, anatomical, chemotherapy and other containers)

### **PARTNERING INTERESTS**

- Distribution of existing products
- Licensing of existing technology for European applications.
- Joint product development of specialized injection molded devices.

## **R. LABORIE SURGICAL LTD.**

6415 Northwest Drive, Unit 11  
Mississauga, Ontario  
CANADA L4V 1X1

Telephone: (905) 612-1170  
Facsimile: (905) 612-1164

Mr. Thomas Hirte, Sr. R&D

### **NATURE OF BUSINESS**

R. Laborie Surgical Ltd. with its division "Laborie Medical Technologies", specializes in endoscopic accessories, computerized urodynamic products for diagnostic purposes respectively.

### **MAJOR ACHIEVEMENTS**

- Introduction of a versatile line of sophisticated computerized diagnostic systems for urodynamics.
- Leading supplier of urodynamic accessories and pressure sensitive recording devices.

### **COMPANY BACKGROUND**

Started in 1967 in Montreal and privately owned, R. Laborie Surgical Ltd. as a medical distribution company has since developed a family of computerized diagnostic systems and accessories under the division name "Laborie Medical Technologies". Laborie Medical Technologies provides medical devices for urologists in the incontinence field.

### **COMPANY PROFILE**

- Sales Volume: \$1.7 million
- R&D Expenditures: \$850,000
- Employees: 94
- Facilities: 40,000 sq. ft.
- Key Alliances: 83% exports with the USA  
2% exports with Europe  
15% exports with Asia/Pacific

### **CURRENT ACTIVITIES**

- Urodynamic recorders
- Pressure sensitive recording devices (software & hardware)
- UDS-Nicki 2 channel computerized urodynamic analyser
- Uroflow transducer
- Electromyography amplifier
- Micro CO<sup>2</sup> Unit

### **PARTNERING INTERESTS SOUGHT**

Companies specializing in analog ultrasound, endoscopy (rigid repairs), sensor technology (pressure), especially sexual dysfunction and urology for technology licensing, collaborative research or joint product development.

## **SANDSTROM TRADE & TECHNOLOGY INC.**

P.O. Box 850  
Welland, Ontario  
CANADA L3B 5Y5

Telephone: (905) 732-1307  
Facsimile: (905) 735-6948

Ms. Pio Sondstrom, Executive Vice President  
Ms. Monica Sondstrom, President

### **NATURE OF BUSINESS**

Sandstrom Trade & Technology Inc. specializes in non-invasive high precision localization precision guidance and immobilization medical technologies within the field of stereotactic neurosurgery, neuroradiology and fractionated radiation therapy, (SRT).

### **MAJOR ACHIEVEMENTS**

- Non-invasive stereotactic, accurately repeatable 3-D localization and patient immobilization system compatible with CT-MRI-PET and angiography.
- Research and development of non-invasive precision guidance medical technologies, to be used from diagnostic to treatment.

### **COMPANY BACKGROUND**

Sandstrom Trade & Technology Inc. specializes in the manufacture and distribution of specialized medical devices used within the fields of stereotactic neurosurgery, radiation therapy, and neuroradiology.

### **COMPANY PROFILE**

- Sales Volume: n/o
- R&D Expenditures: \$1,000,000
- Employees: 3
- Facilities: 1,750 sq. ft.
- Key Alliances: Canadian Aerospace Industries

### **CURRENT ACTIVITIES**

- Developments within MRI-Imaging and Stereotactic fractionated high precision radiation therapy (SRT).

### **PARTNERING INTERESTS**

- European distribution
- Collaborative research in guidance systems for diagnostic imaging and therapeutic treatments.



## **STARPLEX SCIENTIFIC**

50 Steinway Blvd.  
Etobicoke, Ontario  
CANADA M9W 6Y3

Telephone: (416) 674-7474  
Facsimile: (416) 674-6067

Ms. Jennifer Williams, Sr. Marketing & Sales

### **NATURE OF BUSINESS**

Starplex Scientific is a fully integrated manufacturer of biological specimen collection and transportation products.

### **MAJOR ACHIEVEMENTS**

- Starplex Scientific has developed the Leak Buster O-ring system for leak prevention of hazardous liquids and biological products, as well as a 'Dip & Count' diagnostic system and "Starswab" micro-organism transportswabs.
- Starplex products are the standard for the majority of health care facilities in Canada.

### **COMPANY BACKGROUND**

Starplex Scientific is a privately owned company which was originally formed by Canadian Medical Laboratories, a large reference laboratory, and was acquired by a partnership in 1987. The company prides itself on providing products which are designed to meet the needs of safety, ease of use and reliability.

### **COMPANY PROFILE**

- Sales Volume: >\$10 million
- R&D Expenditures: n/a
- Employees: 150
- Facilities: n/a
- Key Alliances: In the U.S. usage of Starplex products are growing, users of note include Smithkline Beecham Clinical Laboratories, and Metpath Reference Laboratories.

### **CURRENT ACTIVITIES**

- Injection moulding and blow moulding of plastic lab supplies
- Biological collection systems
- Histoplex (Histology containers)
- Leakbusters (Specimen containers)
- Starswabs (Microbiology transport swabs)
- Hemat (Plastic blood collection tubes - currently under development)

### **PARTNERING INTERESTS**

- Joint product development/license technology, products for distribution in North America.

## **TELSTAT ELECTRONICS INC.**

1230 Sherwin Road  
Winnipeg, Manitoba  
CANADA R3H 0V3

Telephone: (204) 633-3601  
Facsimile: (204) 694-3795

Mr. Chris Boyle, President

### **NATURE OF BUSINESS**

Telstat Electronics Inc. develops and manufactures a personnel security system for medical facilities where staff working alone may be at risk from patients or other safety risks.

### **MAJOR ACHIEVEMENTS**

Telstat's security system has been tested and validated in numerous hospitals (both general and psychiatric) within the provinces of Manitoba and Ontario.

### **COMPANY BACKGROUND**

Telstat Electronics Inc. is a privately-held company which was formed in 1988.

### **COMPANY PROFILE**

- Sales Volume: <\$500,000
- R&D Expenditures: n/a
- Employees: 6
- Facilities: 2,000 sq. ft.

### **CURRENT ACTIVITIES**

Telstat's staff security system utilizes a patented wrist transmitter that transmits a signal to a zone receiver linked to a dedicated personal computer that displays detailed information immediately. The system utilizes existing telephone lines.

### **PARTNERING INTERESTS**

- Joint market development in Europe.
- Joint product development to make their system compatible with local requirements.

## **TERRA NOVA BIOTECHNOLOGY Co. LTD.**

P.O. Box 13340  
St. John's, Newfoundland  
CANADA A1B 4B7

Telephone: (709) 737-4026  
Facsimile: (709) 737-2101

Ms. Anu Varsava, CEO

### **NATURE OF BUSINESS**

Terra Nova Biotechnology develops diagnostic kits and specialized reagents for use in transplantation and studies of immune disorder diseases.

### **MAJOR ACHIEVEMENTS**

- ISO 9000 in progress

### **COMPANY BACKGROUND**

Terra Nova Biotechnology is a privately held corporation which was incorporated in 1988.

### **COMPANY PROFILE**

- Sales Volume: <\$500,000
- R&D Expenditures: \$2,628,000 (1990-1994)
- Employees: 7
- Facilities: 800 sq. ft.

### **CURRENT ACTIVITIES**

- HLA-DP Epitope typing kits which are used in donor recipient matching prior to bone marrow transplantation
- Genetic testing for disputed paternity
- Research and production of custom monoclonal antibodies
- Development of monoclonal antibody test kits for Rheumatoid arthritis studies
- Development of a device for rapid testing of white blood cell surface molecules

### **PARTNERING INTERESTS**

- Marketing and distribution of immunological reagents in Europe.
- Licensing of unique monoclonal antibodies.
- Packaging of products in Europe.
- Collaborative product development and testing of reagents in bone marrow and Rheumatoid patients.

## **TERRAY CORPORATION**

Pinegrove Industrial Park  
Auriprior, Ontario  
CANADA K7S 3G8

Telephone: (613) 623-3310  
Facsimile: (613) 623-7681

Mr. Raymond Desjardins, President

### **NATURE OF BUSINESS**

Terray Corporation specializes in fracture management, working with the Orthopaedic community to design, develop and manufacture orthopaedic implants and instrument products.

### **MAJOR ACHIEVEMENTS**

- Successfully completed one R&D project with a large multi-national corporation, and awarded a manufacturing contract and a second contract.
- Terray Corporation has managed to launch a major product line once every two years.

### **COMPANY BACKGROUND**

Terray Corporation is a privately-owned Canadian company which was founded in 1983.

### **COMPANY PROFILE**

- Sales Volume: \$350,000
- R&D Expenditures: \$150,000
- Employees: 5
- Facilities: n/a
- Key Alliances: n/a

### **CURRENT ACTIVITIES**

- Fracture fixation implants and instruments.
- Auto CAD, CAD, CNC machining cost effective prototyping.

### **PARTNERING INTERESTS**

- Seeking companies interested in acquiring additional fracture products for distribution, while working with Terray Corporation during the development process.

## **THORATEC LABORATORIES CORPORATION**

1 Cleopatra Drive  
Suite 205  
Nepean, Ontario  
CANADA K2G 3M9

Telephone: (613) 228-8155  
Facsimile: (613) 228-8150

Mr. Daniel Nahon, Manager - Canadian Operations

### **NATURE OF BUSINESS**

Thoratec Laboratories Corp. specializes in Vascular Grafts and Ventricular Assist Devices using its own proprietary blood contacting polyurethane technology.

### **MAJOR ACHIEVEMENTS**

- Development of a unique blood contacting biomaterial.
- Commercialization of a leading edge circulatory assist device.
- Development of a unique vascular graft.

### **COMPANY BACKGROUND**

Thoratec Laboratories Corp. was established as a publicly held medical device company in 1978. Major efforts over the past 10 years have been in obtaining FDA approval and commercialization of its circulatory assist device.

### **COMPANY PROFILE**

- Sales Volume: <\$5 million
- R&D Expenditures: n/a
- Employees: 40 total (Berkeley & Ottawa)
- Facilities: 25,000 sq. ft. in Berkeley  
800 sq. ft. in Ottawa
- Key Alliances: Cobe Cardiovascular is a major shareholder and has distribution rights in certain markets.

### **CURRENT ACTIVITIES**

- Vascular grafts - produced & exported from the Canadian facility
- Ventricular assist device - produced & exported from the Berkeley facility

### **PARTNERING INTERESTS**

- Vascular graft distributors for most countries in Europe
- Negotiating with potential distributors with experience in the medical device sector

## **VISTA LABORATORIES LTD.**

8432-45th Street  
Edmonton, Alberta  
CANADA T6B 2N6

Telephone: (403) 468-0020  
Facsimile: (403) 465-9732

Mr. Colin B. Wylie, President

### **NATURE OF BUSINESS**

Vista Laboratories Ltd. develops and manufactures products for the field of microbiology.

### **MAJOR ACHIEVEMENTS**

- Instrument covered by patent protection in USA, Canada, Europe and Australia
- ISO 9000 in progress

### **COMPANY BACKGROUND**

Vista Laboratories Ltd. is a privately owned corporation which was established in 1976.

### **COMPANY PROFILE**


- Sales Volume: <\$500,000
- R&D Expenditures: \$150,000 annual
- Employees: 5
- Facilities: 5,000 sq. ft.
- Key Alliances: Fisher Scientific Limited

### **CURRENT ACTIVITIES**

Vista Laboratories has developed an automatic petri dish streaking machine, the Isoplater 80 for automatically loading, streaking and stacking up to 180 pre-inoculated petri dishes per hour.

### **PARTNERING INTERESTS**

- Joint market development in Europe.

The image features two soccer balls, one positioned above the other, set against a dark, almost black background. The balls are illuminated from the side, highlighting their white and blue panels. The background is filled with a pattern of small, glowing, reddish-pink rectangular spots, creating a grid-like effect. The overall mood is dramatic and focused on the sport of soccer.

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