



Medical Technology Watch Canada

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Survey

It has been one year since the publication of the first issue of *Medical Technology Watch Canada!* It is time for us to evaluate the impact the newsletter has had on your organization. The results of the survey will be used to ensure that the newsletter continues to meet your needs and add value to your work. Please take a few moments to fill out our brief web-based survey. Please fill out the survey by November 4, 2005. Thank you!

<http://www.ibd.nrc.ca/survey/index.html>

Upcoming Events

Medica

November 16-19, 2005
Düsseldorf, Germany
36th International Trade Fair with Congress
World Forum for Medicine
<http://www.medica.de/>

Technology Mission

Industry Canada's Life Sciences Branch, in collaboration with International Trade Canada, the National Research Council and provincial and industry partners, is planning a Canadian Medical Devices Strategic Business Partnering Mission to Anaheim, California, in late January 2006. The mission is intended to coincide with MD&M West, the world's largest medical OEM event, which will take place at the Anaheim Convention Center, January 30 - February 2, 2006. The mission will focus on strategic business partnering in high technology medical devices including in vitro diagnostics, medical imaging, surgical devices, etc. The focus of the partnering may be on technology development, exporting and/or contract manufacturing. It will provide an opportunity for Canadian companies to showcase their capabilities to a targeted audience and to raise awareness of specific business opportunities with the aim of promoting investment, strategic alliances and partnerships.

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Regional Overview - Alberta



Alberta Environment

The Alberta government has invested heavily in health research and continues to explore healthcare delivery options as a key policy. Their initiatives have been enhanced by the strength of the provincial economy (the fastest growing in Canada over the past 20 years with an annual growth rate averaging 3.7 percent). The population of 3.2 million is concentrated in the Calgary-Edmonton corridor. It tends to be young and entrepreneurial. The health and bio-industries are largely formative (approximately 200), with combined revenues of \$300 million (1/3 export). The province's innovative and rapidly developing medical devices and health services industries generate annual revenues of approximately \$80 million. (<http://www.alberta-canada.com/biotech/healthServices.cfm>) During the past 20 years Alberta has invested \$1.6 billion in sponsored research through various initiatives and funds such as the Alberta Heritage Foundation for Medical Research (AHFMR) and the Alberta Ingenuity Fund, to name but two. Both the Capital and Calgary Health Authorities believe research is a core component of their business. They promote not only basic science research but clinical research, outcomes research and health services research through their work with such academic partners as the University of Alberta, the University of Calgary, Alberta Heritage Foundation for Medical Research, the Institute for Health Economics, the Canadian Institutes of Health Research, the Canada Foundation of Innovation and the Canadian Health Services Research Foundation. The investment sector in Alberta is concentrated around the oil and gas industry but it has actively sought diversification. This concentration of angel investors and venture capitalists, linked through organizations such as the Alberta Venture Capital Association, Angel Investor networks and incubator programs. The TSX Venture exchange, head quartered in Calgary provides expertise and training on public market financing.

Medical Technology Healthcare Drivers

As in other regions, drivers for the development of medical technology are the escalating cost of health care and an aging population. Medical technologies can play a role in bridging the gap between the demand for services and available resources. As such, medical devices that reduce costs as well as the use of capital intensive facilities (self care and home care strategies) will find growing markets. Below are examples of clusters of research and commercialization beginning to evolve as a result of these opportunities.

Microdevices – Biodiagnostics

In Edmonton, development of the pharmaceutical and functional foods industry is built on the strength of the research core at the University of Alberta. The MicroSystems Technology Research Institute (MSTRI) was established in the fall of 2000. Located on the University of Alberta campus within the Faculty of Engineering ECERF building, the goal of MSTRI is to foster the development of a Canadian microsystems industry through the support of innovative research projects, where the anticipated outcomes demonstrate a potential for crystallizing commercial opportunities. The Edmonton region is now in the midst of nurturing Canada's foremost cluster in nanotechnology. Nanotechnology, the science of manipulating individual atoms and molecules, is at an early stage of development. Edmonton's "small" tech community currently comprises at least 19 commercial organizations with world-renowned expertise in such areas as microfluidics, optical Micro-Electro-Mechanical-Systems (MEMS) devices and 3D convergence. The community is now united under a new cluster champion, NanoMEMS Edmonton, formed in 2003. Cluster leaders include the NRC National Institute for Nanotechnology (NINT), the University of Alberta (U of A), the Alberta Synchrotron Institute, the Centre for Nanoscale Physics, the Centre of Excellence in Integrated Nanotools, the Microsystems Technology Research Institute, and the micromachining and nanofabrication facility. Most of the research infrastructure is located at the University of Alberta, currently home to over 150 nanotechnology researchers in electrical and computer engineering, physics, pharmacy, oncology, chemistry and mechanical engineering.

Micralyne Inc. is a world leader in the design and fabrication of MEMS silicon, glass, and thin film components. It has an international reputation for its work with market leaders and well-established start-ups. MEMS are devices containing integrated mechanical components manufactured on an extremely small scale. To put that into perspective, Micralyne manufactures devices on the scale



Regional Overview - Alberta [cont.]



of microns; there are 1,000 microns to one millimetre. MEMS enable order-of-magnitude improvements in the size, cost and performance of components with applications in many industries such as communications, transportation, and biomedical research. Micralyne's MEMS solutions include lab-on-a-chip devices, sensors, and optical switch systems. Micralyne has developed core competencies in several specialized fields like microfabrication, etching, thin film deposition, microfluidics, and packaging and characterization. Celonex, Inc. is a product-oriented company, which develops a platform technology in the area of biochips and its use in diagnostics.

Bioengineering – Health and Wellness, Image Guided Therapy

At the University of Calgary, Health and Wellness has been identified as one of the key research thrusts. The traditional strength in engineering and kinesiology has led to strong collaboration with the medical faculty and the development of biomedical engineering programs. The biomedical engineering programs across the province have also begun to work, each drawing on the strengths of the other. In the **McCaig Centre for Joint Injury and Arthritis Research** basic and clinical researchers in Rheumatology and Orthopaedics, work together with bioengineers to help solve current problems in joint injury and arthritis and to apply the principles discovered to the treatment of patients. The unique facilities available at the McCaig Centre enable these discoveries to be followed from bench to bedside. Calgary companies developing bio-mechanics based instrumentation include **Dynastream Innovations Inc.** (a privately owned company based in Cochrane, Alberta) with world-leading expertise in the research and development of proprioceptive, or “smart,” devices using inertial and wireless technology. In today's global marketplace there is a powerful convergence happening between the increasing interest in health and wellness among consumers, and the growing demand for portable wireless devices or services. There is also a growing demand for the measurement of motion in industrial applications. Add to this, the increasing expectation that information will be digitized and made readily available for observation and analysis on a PC or portable device and some interesting possibilities emerge. The Dynastream team is made up of specialists in biomechanics, embedded design, inertial sensing, GPS design and volume manufacturing of complex systems. Dynastream markets, develops and manufactures proprioceptive and RF products. In addition, **Xsensor Technology Corporation** is a technology firm that provides valuable solutions to its customers by helping them acquire, process, image and share data using proprietary sensor devices, electronics systems and software. XSENSOR is best known for its advanced dynamic interface pressure-measurement systems.

Minimally Invasive Surgery – Robotics and Imaging

The Calgary Health Region and the University of Calgary are developing the world's first image-guided surgical robot in collaboration with MD Robotics, the creators of Canadarm. As a world leader in space robotics, MD Robotics is now looking towards inner space - to the microscopic reaches of the human brain. The goal is to reduce the invasiveness of brain surgery by the use of precise tool manipulation under visual and MRI guidance and ultimately, improved patient recovery rates for neurosurgery. NeuroArm is an MRI-compatible, ambidextrous robot capable of performing the most technically challenging surgical procedures. Its dexterous components are two image-guided manipulators with end-effectors that mimic human hands and are capable of interfacing with new microsurgical tools. It is their intention to transplant Canada's pre-eminence in space robotics into the medical sphere through a collaboration with MD Robotics.

Diagnostic Imaging – Digital Technologies

Imaging National Centre of Excellence. Digital Imaging has major applications in strategic areas such as computer vision, medical imaging and diagnostics, industrial inspection, remote sensing, and seismic imaging. Image processing techniques include techniques for digital representation of images; the human visual system (HVS) and image processing based on characteristics of the HVS; image enhancement for noise removal, sharpening, and edge detection; adaptive image processing; spatial and frequency domain filtering techniques; image deblurring and restoration; image segmentation and analysis; three-dimensional image processing; and color image processing. Computed tomography and auditory analysis of textured images are two digital techniques used in image processing. **Imaging Dynamics Company Ltd. (IDC)** is a publicly traded Canadian company that manufactures and markets digital radiography technology. IDC's single Charge Coupled Device (CCD) detector has more than 16 megapixels digitized at 14 bits per pixel, creating an excellent dynamic range of 16,384 shades of gray. **InnerVision Medical Technologies** is focused on research and development of non-invasive screening technologies that deliver timely, affordable and accessible preventative health care. Their first product, Flash Ultrasound, is intended to be an ultra high-resolution instant-capture ultrasound system for use in early detection of breast and prostate cancer. The technology integrates breakthroughs in acoustic science with super computing to deliver high-resolution ultrasound images and analysis.



Regional Overview - Alberta [cont.]



Bio-Informatics and e-health

Recently, BioAlberta conducted a survey of the health and bio industries within Alberta. According to the results published in their report “BioIndustry in Alberta. A state of the industry report for 2004”, twenty-one percent of Alberta’s bio/health companies with established product were in the field of bioinformatics. As biomedical research becomes increasingly data-centric, the ability to comprehend massive, diverse, highly complex data has been identified as the main challenge in life sciences. The sheer size and complexity of the resulting data collections overwhelm domain experts and it is common that disparate data pieces are meticulously stored but never fully analyzed, a phenomenon known as “write-only data”. A group of Alberta researchers have endeavoured to build biomedical technologies that visualize genetic and physiological processes together in a 3D virtual reality environment. Imagine having the ability to immerse yourself directly within a human body to actually see the inner workings of its genome and to see how physiological changes affect the body over time. Imagine also being able to navigate this amazing virtual world and interact with your data in a user-friendly manner. Making these extraordinary capabilities available to medical and pharmaceutical scientists is the ultimate goal of the collaborative initiative by the **Kasterstener Publications Inc.** from Red Deer, Alberta, and the **Sun Center of Excellence for Visual Genomics** at the University of Calgary. Their approach is to build an object-oriented 3D Atlas of a human body, and use it as a visual platform on which genetics data is visually superimposed. In effect, this will “hide” the complexity of multiple databases behind a virtual model of human anatomy familiar to biomedical professionals. The Sun Centre is a participant in “**An Integrated and Distributed Bioinformatics Platform for Genome Canada**” This project will link the five regional Genome Canada Centres by developing a dedicated hardware component and software platform. The development of Bioinformatics tools (hardware/software) is necessary to facilitate our understanding on how genomes are organized and how cells, tissue and organisms function

Telemedicine – Alberta SuperNet

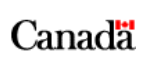
Alberta Wellnet has a single vision and a simple purpose: to enable health service providers to share health information within a secure network environment that will help them to make better decisions about health care. Doctors, nurses, pharmacists, health administrators and other health professionals will all have better access to decision support tools which will help them to provide you, the consumer, with the best possible health care, thus improving the efficiency of the health system. Alberta Wellnet will also help the custodians of your health information within the system to keep that information confidential and to protect your privacy.

The network will increase access to clinical services for clients, provide a medium for education and internet hosted services for both clients and health care providers. Partners in the network include the **Provincial Telehealth Committee** - members of which represent the Health Authorities, Alberta Wellnet, Medical Advisory Group to the Wellnet initiative and Alberta Health and Wellness. The Committee plans strategic direction and provides overall provincial co-ordination to the Telehealth project. This infrastructure provides a platform for private sector collaboration in research and also provides opportunities to supply new technologies.

Alberta SuperNet has provided more than 420 Alberta communities with the capacity to handle Internet service provider (ISP) traffic. In partnership with the government of Alberta, Bell and Axia have constructed and connected 12,000 kilometres of fibre and wireless technology to make broadband service available in rural SuperNet communities. ISPs can now buy bandwidth at reasonable, uniform rates across the province. Some of the greatest benefits of Alberta SuperNet will be experienced in the health care sector, particularly in those rural areas currently under-served by high-speed Internet access. Regional health authorities will enjoy improved and immediate access to information, and will be able to share information quickly and efficiently with other regions. Health care practitioners will benefit from working with new or enhanced e-health applications, including real-time records transfer, ultrasound, and online consultations with clinical specialists. Doctors and nurses in communities previously under-served by high-speed access will benefit from e-learning applications, as they become able to attend and participate in online learning sessions without having to travel to urban centers for the same educational benefits. For all health facilities and regions, SuperNet will result in faster, more economical high-speed transmission of data.

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Biomedical Polymers Laboratories at the Industrial Materials Institute

On June 7, 2005, the President of the National Research Council Canada (NRC) inaugurated the Biomedical Polymers Laboratories at the Industrial Materials Institute, a major NRC investment in this emerging field. The infrastructure will provide the industry with facilities for developing and prototyping polymer-based medical devices as well as support the development and commercialization of new technologies from NRC internal projects.

The infrastructure consists of three complementary laboratories for polymeric medical device fabrication and testing of biological tissues:

- Class 10,000 clean room
- Class 100,000 clean room
- Level 2 biosafety lab

The equipment and capabilities available in the infrastructure include:

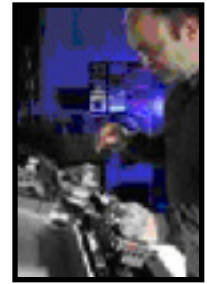
- Micro-blow moulding for fabrication and assembly of medical balloons
- Medical grade extruder for fabrication of catheters/porous materials
- Deployment device for physical simulation of vascular interventions
- Plotter for fabrication of controlled 3D porous polymer structures
- Optical coherence tomography for vascular imaging
- Biorheometer for characterizing biological tissues, at 37oC, in uniaxial, biaxial and compression modes
- Mechanically loaded bioreactor for tissue engineering
- Set-up for characterizing electrodeformable materials
- Standard and inverted microscopy capabilities
- Computer modeling capabilities for prediction of biomechanical behaviour

The laboratory currently supports three main research themes involving several NRC groups as well as a multitude of external partners:

1. Design of advanced balloon-catheter systems
2. Surgical simulation and intravascular imaging
3. Design of functional polymer scaffolds

The design of advanced balloon-catheter systems research aims to build on the available infrastructure, to work with industrial and medical partners on the development and commercialization of specific novel devices. Balloon-catheter systems with specialized functions are targeted, including non-conventional dilatations, localized treatment and diagnostics.

The surgical simulation and intravascular imaging research aims to develop software and imaging tools for planning of various medical interventions, such as angioplasty and neurosurgery. The Industrial Materials Institute works in partnership with the NRC's Institute for Biodiagnostics in Winnipeg as well as medical partners such as Foothills Hospital, the McGill University Health Centre and the Montreal Heart Institute.



A technician prepares an angioplasty balloon using equipment at the NRC-IMI Biomedical Polymer Laboratory



Biological tissue mechanics

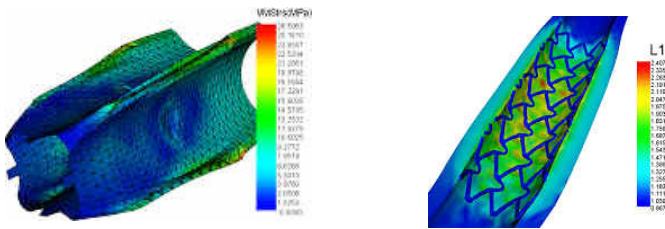


Medical balloon forming



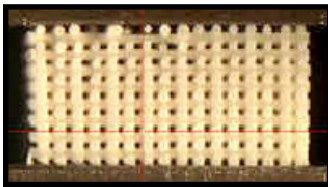
3-D Plotter

Biomedical Polymers Laboratories at the Industrial Materials Institute (cont.)

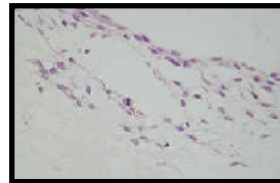


Simulation and design of deformable structures

Finally, the design of functional polymer scaffolds research aims to develop tools to prototype and optimize scaffold geometries and shapes for loaded-tissue engineering and drug/gene delivery for orthopaedics, cardiology and oncology applications. The Industrial Materials Institute works in partnership with the Biotechnology Research Institute, Sacré Coeur Hospital, Mount Sinai Hospital and the Montreal Jewish General Hospital.



Deformable biostructures



Cell growth on polymer scaffold

For further information, please feel free to contact:

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Patent Links

The World Intellectual Property Office (WIPO) has division and web site dedicated to Small and Medium-Sized Enterprises (SMEs).

Visit the website at: <http://www.wipo.int/sme/en/>

Numerous guides and manuals on the topic of intellectual property and SME's can be found at this site: http://www.wipo.int/sme/en/documents/guides_manuels.htm

WIPO SME Newsletter: http://www.wipo.int/sme/en/documents/wipo_sme_newsletter.html

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View a presentation by Stephen Adams of Magister Ltd. on patents as a source of business and industry information: <http://www.magister.co.uk/presentations.htm>



Company Profile - Imaging Dynamics Company Ltd



Imaging Dynamics Company Ltd. (IDC) manufactures the Xplorer™ systems - an affordable, efficient high-resolution digital radiography detector and diagnostic image management system that eliminates the need for film in general radiographic imaging.

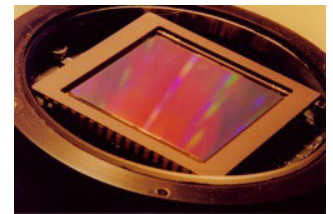
Robin Winsor is the inventor and developer of Imaging Dynamics' patented digital radiography technology. He began his pioneering work in this field fourteen years ago, combining his expertise in physics and image processing with his wife's input on veterinary radiology. Mr. Robin Winsor retains a hands-on position in the company as Chief Technical Officer. In addition to his role, the company relies on the talents and skills of Mr. Darryl Stein, President & CEO, and Mr. Karim Teja, CFO.

Imaging Dynamics manufactures and markets direct digital radiography systems for the medical imaging market. Until now, X-rays taken with a traditional system are processed onto film for viewing and analysis. With a Digital Radiography (DR) system, the same X-rays are now available digitally with greater resolution and contrast range. Currently, there are two distinct DR systems depending on the technology platform used. The "flat panel" system uses a screen to absorb the x-radiation and convert the light data into electronic data; no camera is used. Flat panel technology is fairly efficient, however the unit price is considerably higher and the life span of the panels is questionable. As this has been the predominant technology available to the DR market so far, the adoption rate for DR has lagged over the past five years.

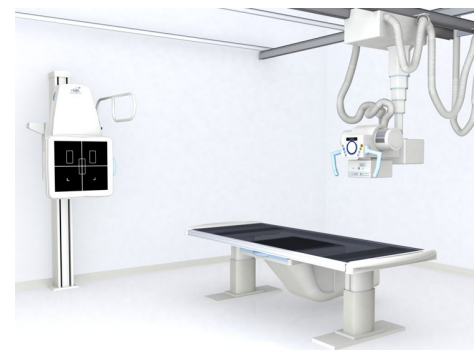
The second platform is an optical system. IDC has developed optical systems and associated image-processing software for digital X-rays. The company's patented technology uses a single Charge Coupled Device (CCD) camera to convert an X-ray into digital data. A visual image is generated when X-rays pass through a subject and are absorbed by a phosphor-imaging screen. The visual image is transferred optically to a CCD. The digital data generated by the CCD is then processed in a computer and the X-ray image is displayed on a high-resolution monitor. With the help of a Picture Archiving Communication System (PACS), the images can then be stored digitally, retrieved, and be shared among several radiologists, whether they are in the same room or across the world. Thus an Xplorer™ unit operating in a remote village could beam its images to radiologists in Europe or North America, providing an invaluable tool for improving health care in the Third World.



Xplorer™ 1600 - Comprehensive DR solutions for all Radiographic Environments



Charge Coupled Device (CCD) - The technology in the Xplorer™ family of DR systems



Xplorer™ 2200 - Twice as Efficient, the IDC Dual Detector Solution

Company Profile - Imaging Dynamics Company Ltd (cont.)



imagingdynamics.com



Xplorer™ 1500 - Vertical Imaging from head to toe!

Digital X-ray systems offer hospitals and imaging clinics significant diagnostic, economic and organizational advantages. On a digital system, X-rays are completed in a fraction of the time of traditional X-rays and can be viewed instantly. This enables the technologist to determine the accuracy of the X-ray and retake the image if necessary without the usual patient waiting time. Viewing the images digitally also allows the layers of the X-ray to be “peeled” back such that a single X-ray can reveal all the layers from skin to bone.

This reduces the number of X-rays required of a patient and subsequently limits the radiation exposure as well. The speed of digital X-rays also enables technologists to complete more exams in a day, making imaging suites more efficient and reducing the number of suites needed in a hospital or clinic to maintain the same volume of patients.

Based on these advantages and market potential, Imaging Dynamics was incorporated as a company in 1995. It subsequently went public on the Alberta Stock Exchange on the 100th anniversary, to the very day, of the discovery of X-ray radiation. Since the installation of its first prototype in 2000, IDC has continued to add products to the Xplorer™ family and installation sites. Recent Q2 – 2005 preliminary results were at record levels for revenues, earnings and units shipped. In addition, Imaging Dynamics was recently listed as one of Alberta’s Fastest Growing Companies and is nominated for Ernst & Young’s 2005 Entrepreneur of the Year award.

Currently, IDC coordinates the manufacture of the Xplorer™ family of products from its head office in Calgary, Alberta. The products are available in Canada, the United States, Australia, Europe, China and the Middle East through a system of dealer networks and Original Equipment Manufacturer (OEM) relationships. The company competes directly with giants such as Canon, GE Medical, and Siemens for a share of the \$6 billion (USD) medical imaging market. IDC has recently launched the product series Xaminer™, a line of CCD Digital X-Ray Detectors aimed at very large and cost sensitive market segments.

For the short-term, IDC’s business plan is focused on expanding the worldwide market for the Xplorer™ products and technology. Long term, the IDC technology can be applied to other medical fields such as mammography as well as industrial applications such as non-destructive testing. Additionally, the company hopes that as manufacturing volumes drive costs down, the technology will be affordable for deployment in developing countries where screening X-ray services are presently unavailable due to the shortages of radiologists.

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Market Report Highlights

The World Medical Market Report 2005 – Current Trends & Future Prospects

Espicom Business Intelligence Published: May-05

In more than 230 information-packed pages, the report provides a wealth of difficult-to-source data from hundreds of national and pan-regional governments and organisations, including market size and growth for the whole medical device and equipment market as well as detailed figures for 16 product sectors, 2005-2010.

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Strategic Analysis of the Image-Guided and Robot-Assisted Surgery Markets in Europe

Frost and Sullivan Published: 19 Jan 2005

This *Frost & Sullivan* Strategic Analysis studies the IGS and RAS markets in Europe under various segments such as the neurological, ENT, orthopaedic and other surgical applications. The research service provides a comprehensive overview on vital market trends, drivers, restraints and challenges. This information is expected to aid industry participants in accurately identifying and effectively capitalising on available opportunities and avenues for market penetration and growth.

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 204-984-6027.

Medical Imaging

Business Communications Company, Inc. Published: July 2005 - Marsha Zager

This BCC report shows how a global industry of competitive and visionary firms, ranging from giant market leaders to ambitious startups, has drawn together scientific advances from many fields to deliver a remarkable series of product innovations. It outlines new opportunities in medical imaging and forecasts markets by product category, application and geographical area through 2009. In addition to medical imaging equipment, markets for auxiliary products are reviewed. Emerging imaging methods that appear promising but have not yet had a major impact on the marketplace are identified.

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China Medical Imaging Markets

Frost and Sullivan Published: 8 Jun 2005

What's Included: Detailed insights into recent developments and trends; Drivers, restraints, challenges, and strategic recommendations; Detailed instructions and guidelines of the latest Chinese Government Regulatory Framework, Government Tendering/ Bidding Process and Requirements, Healthcare Infrastructure, and Insurance System; Analyst insights on "hot topics" and market trends in the Medical Imaging Industry; Market sizing and competitive analysis; Market forecasts and opportunity analysis; Analysis of top driving and restraining factors of market

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Emerging Geographic Markets for Medical Imaging Modalities in Europe

Frost and Sullivan Published: 18 May 2005

This Frost & Sullivan research service provides an overview of and an outlook for the medical imaging markets in Russia, Poland, the Czech Republic, Hungary and the Baltic States, detailing revenue forecasts by region and segment as well as providing market share analyses. It also looks into the major market sectors – magnetic resonance imaging (MRI), computed tomography (CT), ultrasound scanners and x-ray systems. This information is valuable to both large and small participants that seek to position themselves for maximum return on investment.

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The Alberta Heritage Foundation for Medical Research

Introduction

The Alberta Heritage Foundation for Medical Research (the Foundation) was established in 1980 by the Government of Alberta with an endowment of \$300 million to support a balanced, long-term program of health research based in Alberta. In January 2005 the provincial government announced an additional \$500 million for the Foundation's endowment. The Foundation's mission is to support a community of researchers who generate knowledge whose application improves the health and quality of life of Albertans and people throughout the world. Our long-term commitment is to fund health research based on international standards of excellence and carried out by new and established investigators and researchers-in-training.

Operating with a portion of the endowment interest, the Foundation supports health researchers throughout the province in universities, affiliated hospitals and health regions. The Foundation is arms'-length from the government and is accountable to the people of Alberta. It is governed by a Board of Trustees, and led by a President and Chief Executive Officer.

Since 1980, the Foundation has contributed more than \$800 million to the Alberta health research community. Funds are awarded through a peer review system, which is advised by expert committees. More than 7000 researchers and researchers-in-training have been supported by the Foundation's programs.

The Foundation has several distinct program areas, including:

1. Grants and Awards – This is the main delivery mechanism for the Foundation's core business of funding health research. It includes support of personnel awards for biomedical and health researchers, awards for equipment and laboratory start-up/renovations, travel and visiting lecturer grants, and funding for students and post-doctoral fellows.
2. Applied Health Research – This area supports the development of research capacity throughout the province by improving access to relevant health research by organizations and professionals.
3. Health Technology Assessment – This unit conducts reviews of research evidence by request to give doctors and other healthcare professionals the most current global information about health technologies. This unit was established in collaboration with Alberta Health and Wellness.
4. Technology Commercialization (TC) – This program offers information, mentorship, training and financial support to researchers who want to develop scientifically validated innovations into marketable medical technologies that lead to improved health.

In order to achieve its mission, the Foundation must ensure that the knowledge generated by research is disseminated. This goal is achieved through several means including publication, education and commercialization. In Alberta, a key component in the dissemination of health research to the public through commercialization is the Foundation's TC Program.

The Technology Commercialization Program

Since 1989, the TC Program has directly invested more than \$21 million in more than 260 people and projects. The Program assists Alberta innovators with the transfer of scientifically validated innovations into successful commercial products and services. In particular, the TC strategy focuses on the early stages of commercial development: identifying opportunities, supporting the people behind the ideas, and gearing technology development toward market readiness.

Through the ForeFront Committee and the peer review processes, applicants can tap into knowledge and experience in areas such as intellectual property, product testing, scale-up, marketing, and business planning. In addition, successful applicants receive ongoing feedback and advice on technology, business and market development.



The Alberta Heritage Foundation for Medical Research (cont.)

The ForeFront Committee is comprised of private-sector advisors who have a wide array of skills in science and business. The peer-review process involves close interaction with ForeFront Committee members and other experts during the evaluation, development and project execution stages.

This process of close interaction with experts during the evaluation process, and in defining and executing critical steps in product development and commercialization has had a significant impact on the TC Program in four key areas:

1. Improved Peer Review – A wide range of expertise is available to scrutinize each application and applicants have a high degree of involvement and feedback in the process.

“There is no question in my mind that improved quality of review means improved quality of projects, which translates into improved chance of commercialization. And in the end, this is what the TC funds are supposed to achieve.”

-Dr. Lorne Babiuk

2. Quality Interaction with and Feedback to Applicants – The TC Program gives entrepreneurs access to strategic resources, not just money, but advice and people. Applicants are provided with in-depth scientific, technical, and business reviews that are valuable in technology and business development; applicants receive information at every step of the review. The interaction with the ForeFront Committee gives applicants the opportunity to receive feedback to address key issues.

“There has been a marked improvement in the quality of feedback given to applicants. You can see the difference now. We’re getting focused, real-life, practical comments from the ForeFront Committee.”

-Ron Matheson

3. Enhanced Mentoring and Advice During Project Design – During the review process, entrepreneurs learn the strengths and weaknesses of their application for funding and their overall business plan. With the input of an experienced business mentor or technical expert, companies can focus their planning and convert these plans to action. This can lead to success in the marketplace.

“The consultants prompted us to think through the details of our business strategy in a way we hadn’t before. They brought up business and strategy issues that we had not tackled seriously. They forced us to justify all our assumptions and all our implementation plans. They were a sounding board for our ideas, and they provided high-quality, objective feedback. I don’t know of any other way we would have gotten this advice.”

-Dr. Al Dobbs

4. Ongoing Support for Funded Projects – Through ongoing review and interaction, the Foundation keeps abreast of issues as they arise. This gives the TC Program and the ForeFront Committee flexibility to “jump in” when required – providing support in moving projects around obstacles or in new directions.

“The critical factor is that ForeFront took decisive action and spent money in a way that ended up truly advancing commercialization. Rick Brommeland (ForeFront Committee member) came at this project from an entirely different perspective, which turned out to be the foundation for our success. Although we’re still in the early days of the agreement, there are potential significant benefits to Alberta.”

-Dr. Richard Stein



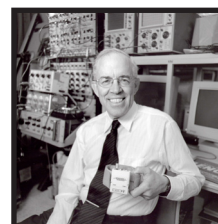
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Ron Matheson
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Dr. Al Dobbs
Professor Emeritus – University of
Alberta
Founder and Chairman - DriveABLE
Assessment Centres Inc.
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Dr. Richard Stein
Professor, Medicine & Dentistry
– University of Alberta
President & CEO - Biomotion Ltd.
Edmonton, AB

The Alberta Heritage Foundation for Medical Research (cont.)

Conclusion

Technology Commercialization is an important pipeline for the transfer of medical and health research into products and processes that will ultimately improve health. AH-FMR, through its TC Program and the value-added contribution of the ForeFront Committee and peer review processes, is strengthening both the infrastructure for effective technology commercialization and the projects that feed this pipeline.

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AHFMR
ALBERTA HERITAGE FOUNDATION
FOR MEDICAL RESEARCH

Meet the Team - Medical Devices Group & Industry Associations



Dr. Denys Cooper

Denys G. T. Cooper, Senior Advisor- Technology & International, IRAP, National Research Council Canada

Denys Cooper joined the National Research Council's Industrial Research Assistance Program (IRAP) in 1973 as an Industrial Technology Advisor. Dr. Cooper was appointed a Director of the technology transfer element in 1989.

In 1999, he was appointed IRAP's Director Strategic Alliances with a particular focus on international collaborations with SMEs (Small and Medium sized Enterprises).

He presented a paper to the 2001 WTO seminar in Geneva on Globalization of Technology Transfer to Developing Countries.

He has also worked extensively with the biotechnology sector. In particular, he has tracked their bio finance investments, which have amounted to over \$10 billion over the last 5 years.

Currently, as a Senior Advisor, he is studying the growth of SMEs, and maintains an interest in the socio- economic impact of university and spin off firms. He presented papers in Washington [in 2004 April and Phoenix in 2005] on the socio-economic impacts from over 800 of these firms, they amounted to \$6.1 B in sales and 29,000 jobs in 2004. His other interests include R&D tax credits, and growth of SMEs – in particular gazelle firms. Dr. Cooper has a Ph.D. in polymer science from the University of Liverpool in the U.K.

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The Health Technology Exchange

Canada

Meet the Team - Medical Devices Group & Industry Associations (cont.)

Vera Keown has been the head of the NRC Information Centre in Winnipeg, a branch of the Canada Institute of Scientific and Technical Information (CISTI), since 1998. The information centre was CISTI's "flagship" virtual library when it opened its doors in 1993. The Winnipeg centre supports the research activities of the NRC Institute for Biodegnostics and Manitoba industry via the NRC Industrial Research Assistance Program (NRC-IRAP).

For the last four years, Ms. Keown has been providing business and competitive technical intelligence services to Manitoba SMEs working with NRC-IRAP. The NRC Information Centre has built a solid reputation for helping Manitoba research institutes and companies access the latest and most reliable information available to solve their technical challenges and make informed business decisions.

Prior to joining the National Research Council, Ms. Keown was an information specialist and technical research analyst with EDS Canada. Ms. Keown obtained a B.Sc. (Honours) in Genetics from the University of Manitoba and a Masters of Library and Information Studies from McGill University.

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Ms. Vera Keown

AITS: For a healthy industry



The Association of Health Technologies Industry's (AITS) mission is to stimulate the development of health technologies and to promote the industry's social and economic value.

The Association counts some one hundred members coming from companies active in the research, development, production and distribution of materials, equipment, supplies, computer services and products intended for the health sector.

Since 1987, AITS partakes in making its members known to domestic and foreign markets and also sees to the defense of their interests. By bringing together dynamic contributors and the needed resources, AITS is at the core of this **innovative** and **highly advanced industry**.

Through the years, AITS has become an important source of information, a meeting place for exchanges between partners playing a key role in the growth or the medical industry.

Benefits of becoming a member:

- A power of intervention and of representation with buyers and decision makers;
- Organization of numerous training, information and networking events as well as trade missions with the ExportMed International division;
- Exchanges of ideas on the major issues facing the industry through the members committees and modules;
- Networking and key contacts with various contributors to the industry (suppliers, buyers, trade commissioners);
- Visibility with the help of promotional tools such as the member listing and the association's Web site;
- Industry watch and information sharing through news reported in our publications;
- Special members-only programs (group insurance plans, special rates on various services, etc.);
- References, assistance services as well as professional advice.



Mrs. Nicole Bureau-Tobin
Executive Director

AIMS : For a healthy industry (cont.)

At the end of 2004, AITS conducted the first ever complete census on the industry of health technologies in Quebec. This portrait of the sector has been long awaited by all of the partners (including IRAP-NRC) that collaborated in its production. The primary objective of this endeavor was to establish a classification that would reflect the reality which, all agreed, tended to be oversimplified by official statistics. The summary of this study is available on the AITS Web site at www.aims.ca, section "Industry Overview".



Soon to come, phase II will take a more thorough look at the features of the profile and suggest ways of accelerating the industry's development, so as to increase its prosperity as well as that of Canadian society.

Visit our Web site at www.aims.ca or contact us!

Nicole Bureau-Tobin
Executive Director

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Meet the Team – Industry Associations



Association of Health Technologies Industry



The Nova Scotia Biotechnology and Life Sciences Industry Association



BC MedTech

BC Medical Technology Industry Association



Health Care Products Association of Manitoba



The Health Technology Exchange

The Health Technology Exchange



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