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INVENTORY OF PROGRAMS FACILITATING THE COMMERCIALIZATION OF UNIVERSITY RESEARCH

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Summary and Overview

This inventory identifies 47 private, federal and provincial programs that contribute to the commercialization of university research in Canada. Many programs involve partnerships between private and public entities. The programs have been grouped into the following eight categories:

- Programs that build industrial receptor capacity by funding collaborative industry-academic R & D;
- Programs that result in a closer alignment of university research with private sector needs;
- Programs that link stakeholders (e.g. university researchers, investors, industrial receptors) to facilitate the commercialization of university research;
- Programs that provide direct support for the commercialization of university research (development of prototypes, marketing studies, etc.);
- Programs that build the management capacity of innovators;
- Seed funds targeted at the commercialization of university research;
- Programs that enable universities to operate effective University Industry Liaison Offices; and
- Other.

The most predominant type of program identified (15) involves strengthening industrial receptor capacity by funding collaborative R & D. These programs are thought to contribute to commercialization outcomes by shifting away from a "technology push" approach by universities in favour of "technology pull" by industrial partners. Many of these programs promote collaborative research in particular technological sectors, notably biotechnology, information technology, natural resources and engineering. All programs identified in this area are initiatives of federal or provincial (BC and Ont) governments.

Several initiatives (5) were found to promote a closer alignment of university research with private sector needs. This type of research may have greater potential for commercialization in the shorter-term, as most of the initiatives provide funds to staff specific faculty positions with researchers who possess expertise in demand by industry. Close ties are then formed between firms and university departments. Other initiatives bring together faculty and industry to better align goals. Again, federal and provincial (Ont, BC and Que) governments appear to be the primary supporter of this type of initiative.

Some programs (6) link university researchers with investors and industrial receptors to facilitate the commercialization of their research. These are primarily Internet-based federal initiatives.

Also identified were programs (7) that provide direct support for commercializing university research. These programs generally involve the provision of capital or expertise to undertake market assessments, protect intellectual property, develop business plans, etc.. Initiatives identified were federally, provincially and privately sponsored. These programs generally accelerate the commercialization process and decrease risk to innovators by ensuring that adequate assessments of new technologies are made.

Few programs (2) were found to build the general management capacity of innovators through mentoring.

New seed capital funds have recently been established, focusing on investment opportunities in Canadian universities and research institutions. Those identified (8) are for the most part delivered by the private sector with federal/provincial support. They include such players as: MDS Capital Corp., Bank of Montreal, Ventures West, and Royal Bank. Several funds are regionally targeted (e.g. T^2C^2, Eastern Technology Seed Fund, Western Technology Seed Fund), while others have a specific technological focus (e.g. neuroscience, biomedicine).

There does not presently appear to be much support (2 initiatives) for universities that wish to strengthen the capacities of their industry liaison offices (UILOs). The Intellectual Property Management Program, sponsored by the Natural Sciences and Engineering Research Council, provides funding to universities to help their UILOs train staff, conduct market surveys, protect intellectual property, etc..

The NSERC-SSHRC Program of Chairs in the Management of Technological Change Program provides awards to encourage studying, teaching, and training on how technological change and entrepreneurship should be understood and consequently managed. Understanding and improving the entrepreneurial culture will better facilitate commercialization.

Federal and provincial governments offer R&D tax incentives to Canadian businesses, which are intended to encourage firms to conduct R&D and develop new or improved technologically advanced products or processes.

The scope and magnitude of assistance available for the commercialization of technology is a clear indicator of its importance to universities, industry and the economy as a whole. Appendix A includes a list of over 50 Industry Liaison Offices, which have been established at Canadian universities, teaching hospitals, technical institutes and colleges. These offices specifically facilitate the transfer of research and knowledge from academia to the private sector. Also instrumental in the commercialization process are the existing university and college related incubators (12) and industry research centres (12) highlighted in Appendices B and C respectively.

If you are aware of other programs facilitating the commercialization of university research, or know of existing program descriptions that are in need of modification, please contact Angie Brennand of the ACST Secretariat at (613) 952-8992.

Programs that Build Industrial Receptor Capacity by Funding Collaborative Industry-Academic R & D

These programs are thought to contribute to commercialization outcomes by shifting away from a "technology push" approach by universities in favour of "technology pull" by industrial partners.

Advanced Systems Institute (ASI) Industrial Partnership Program

Who: The British Columbia Information, Science and Technology Agency

Mandate: To provide matching funds (50%) for university professors or graduate students to work in partnership with advanced systems technology companies (information technologies, microelectronics, robotics and telecommunications) to solve a research problem for up to 12 months. The Strategic Research Program component of the initiative supports research projects of up to two years duration and supports one or more university expert at up to 75% of the cost of the academic partner.

Collaborative Research and Development Grants (CRD)

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To support well-defined research projects carried out jointly by universities and companies.

- NSERC will bear up to half the cost of a project, with recognition of tangible industrial in-kind contributions.
- Projects can be at any point on the R&D spectrum that is consistent with the university's research, training, and technology transfer mandates.
- Projects are selected for their technical or scientific merit, the expertise of the research group, the suitability of the industrial partner, and the potential for Canadian benefits.

Budget: $26.5 million in 1998/1999

Graduate Research, Engineering and Technology Scholarships (GREAT)

Who: The Science Council of British Columbia

Mandate: GREAT scholarships are designed to encourage collaboration between BC's universities and BC industry. To be eligible for scholarships, Masters and Ph.D students in engineering and the sciences must work closely with a private sector organization on a significant portion of their thesis.

Industrial Research Fellowships

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To provide recent doctoral graduates with two years of postdoctoral research experience in an industrial setting, working on a project defined by a sponsoring company.

- NSERC contributes $30,000 annually towards the fellow's salary; the host company must contribute at least $10,000 for a minimum salary of $40,000. The company pays for associated project costs. NSERC awards approximately 80 fellowships annually.

Budget: $3.9 million for 1999-2000

Industrial Postgraduate Scholarships

Who: Natural Sciences and Engineering Council (NSERC)

Mandate: To provide financial support for master's and doctoral students to gain research experience in industry while undertaking advanced studies in the natural sciences and engineering. To satisfy the conditions of the award, students are expected to spend a minimum of 20 percent of their time at the sponsoring company on activities related to their thesis project.

- NSERC awards approximately 180 of these scholarships per year, and contributes $13,800 to each award yearly. In addition, the sponsoring company must contribute a minimum of $5,550 per year in support of the student.

Budget: $2.5 million for 1999-2000

Undergraduate Student Research Awards in Industry

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To provide financial support for undergraduate students who wish to spend time working in an industrial research setting, in order to stimulate their interest in research and encourage them to undertake graduate studies in the natural sciences or engineering.

- There are approximately 550 awards available annually. NSERC contributes $900 per month for a maximum term of 4 months, while sponsoring companies are required to supplement the award by at least 25% of its value.

Budget: $2 million in 1999-2000

Networks of Centres of Excellence (NCEs)

Who: Natural Sciences and Engineering Research Council (NSERC), Social Sciences and Humanities Research Council (SSHRC), Medical Research Council (MRC) and Industry Canada

Mandate: To promote research collaborations between the academic, private and public sectors through 14 NCEs in areas such as health and biotechnology, information technology, natural resources, infrastructure, and computer-aided learning.

- Networks compete for seven years of NCE funding, and may compete for an additional seven years of NCE support.

Budget: $47.4 million per annum

Ontario Centres of Excellence

Who: Ontario Ministry of Energy, Science and Technology

Mandate: The Centres of Excellence (Centre for Research in Earth and Space Technology; Communications and Information Technology Ontario; Materials and Manufacturing Ontario; and Photonics Research Ontario) are research networks with projects being conducted at several universities across Ontario. They involve university researchers, research institutions and industries working together to address industry's research needs and nurture spin-off companies.

The Centres have been successful in building links between industry and the universities. They have:

- worked with more than 1,000 Ontario companies and more than 350 researchers;
- been granted 370 patents; and
- issued 310 technical licences to industry.

Ontario Research and Development Challenge Fund

Who: Ontario Ministry of Energy, Science and Technology

Mandate: To promote collaboration between the public and private sectors by providing funds for collaborative research. The fund supports leading-edge research that benefits industry; provides state-of-the-art equipment and facilities; and provides incentives for gifted researchers to work in Ontario.

- To qualify for funding, proposals must be supported by a private-public sector partnership agreement and a minimum of one-third private sector financing.

- The Ontario government will contribute $500 million over the next 10 years (1998-2008), which in turn is to leverage a total investment of over $3 billion for the R&D capacity of Ontario universities and other research institutions.

- Fund will primarily support projects in the fields of natural sciences and engineering, mathematics, health sciences, and environmental sciences.

Budget: $500 million over ten years (1998-2008).

Research Networks

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To support large scale, complex research projects that involve multi-sectoral collaboration on a common research theme and demonstrate the added advantage of a network approach. Projects usually involve at least five researchers from three organizations. Participation from outside the university is essential.

Budget: $10 million in 1998/99

Research Partnership Agreements

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To foster collaborative research between universities, industry and government organizations, in areas of priority identified by the government partner. Agreements in place include: Agriculture and Agri-Food Canada; Department of National Defence; National Research Council; Canadian Forestry Service; and Natural Resources Canada (beginning in 1999). At least one industrial partner is required and the program will contribute two dollars for every dollar contributed by industry.

Budget: $5 million in 1998/1999

Strategic Projects

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To fund pre-competitive university research in partnership with non-university partners. Participation by partners outside the university sector is essential. The appropriateness of the partner's commitment to the project (financial and otherwise) will be assessed in terms of the potential benefits they derive from their participation.

The program accepts proposals in all areas of science and engineering; however, the following research areas are targeted: biotechnologies; energy efficiency technologies; environmental technologies; information technologies; manufacturing and processing technologies; and materials technologies.

Budget: $29.2 million in 1998/1999

Technology Assistance Program (TAP)

Who: The British Columbia Information, Science and Technology Agency

Mandate: To provide financial assistance for collaborative research to SMEs not having the necessary personnel or facilities to carry out their own R&D. Projects must be oriented to engineering or science, and often involve industry/university collaboration. Funding is to a maximum of $40,000, or up to 50% of the project costs.

Technology BC

Who: British Columbia Science Council

Mandate: To provide funding for applied research and development. A Collaborative Component of this initiative encourages BC-based companies to work with academics and research institutes by supporting up to 100% of the academic or research institute's costs and up to 50% of the company's costs, the award not to exceed 75% of total costs. Eligible projects include completion of R&D initiated at a BC academic or research institute which is now being transferred to a BC industrial organization; or R&D initiated by a BC industrial organization using the expertise at a BC academic or research institute.

University-Industry Program

Who: Medical Research Council (MRC)

Mandate: This initiative provides an opportunity for health researchers to work in close cooperation with industry through funding collaborative research.

- Companies involved in this cost-shared program must provide a minimum financial contribution of two-thirds of the total direct costs.

Programs that Result in a Closer Alignment of University Research with Private Sector Needs

This type of research has a greater potential for commercialization in the shorter-term.

Advanced Systems Institute (ASI) Fellowships and Programs

Who: The British Columbia Information, Science and Technology Agency

Mandate: This initiative provides fellowships to professors new to BC whose technical interests match the technical needs of BC industry. The funding enables professors to assist BC advanced systems companies conduct R&D.

Industrial Research Chairs

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To build on existing strengths, develop new strengths, and create a critical mass for major research efforts in areas important to industry. NSERC and industry provide funds to support the salary of a distinguished researcher as well as junior faculty, infrastructure, equipment and general research costs. Awards are for an initial five years, renewable for five more.

Budget: $12.5 million in 1998/1999

New Faculty Support Program

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: This initiative is designed to help universities, jointly with industry, fill junior faculty positions in research areas of interest to industry. The sponsoring company contributes to the salary of the incumbent and/or the research program, and NSERC contributes a similar amount to the research costs.

Ontario Rehabilitation Technology Consortium (ORTC)

Who: Ontario Ministry of Health

Mandate: To develop and commercialize innovative rehabilitation technology-based products and services for persons with disabilities, their families and their communities. The ORTC brings together researchers from universities and health institutions across Ontario. Guidance is given to the researchers by consumers, clinicians and industry. The Technology Transfer Unit of the ORTC then helps the teams with the following to best commercialize the technology:

- liaison with industry and other sectors;
- review projects involving technology transfer; and
- support for acquisition of patents and copyrights, negotiation of license agreements, and other legal processes.

Technological Research Assistance Program

Who: Government of Quebec

Mandate: To promote collaboration between colleges and their commercial, industrial or community partners. This initiative provides funds to cegeps and technology transfer collegiate centres, to allow researchers to meet with Quebec firms to share information on their research and development.

Programs That Link Stakeholders (e.g. university researchers, investors, industrial receptors) to Facilitate the Commercialization of University Research

Canada Community Investment Plan (CCIP)

Who: Industry Canada

Mandate: The federal government launched the Canada Community Investment Plan in 1996 to link investors with entrepreneurs in non-financial centres. The program will award $600,000 over five years to 20 communities which develop the best plans for building a network for entrepreneurs seeking capital to tap. The networks link entrepreneurs to investors and individuals who can help them develop their business case.

Canadian Technology Network (CTN)

Who: National Research Council (NRC) and Industry Canada

Mandate: The CTN's mission is to provide pathways to technology-related information and business assistance relevant to small and medium sized enterprises using technology. This is done through a cross country network of organizations and advisors. Each advisor is employed by an organization known for its technology or related business competence. Electronic requests for information are distributed by a central advisor to the most appropriate advisor, who then responds to the request.

Web Site: http://ctn.nrc.ca

Industrial R&D Search Engine

Who: Foreign Affairs, Industry Canada and Evert Communications Ltd.

Mandate: This database accesses information on research expertise, R & D firms' name, address (also www) and contact person for 1,000 of Canada's major R & D firms.

Web Site: http://www.cisti.nrc.ca/programs/indcan/demo/searchhp.html

Industrial Research Assistance Program (IRAP)

Who: National Research Council (NRC)

Mandate: To provide technical and financial support to small and medium-sized enterprises (SMEs) to access or acquire technology and expertise, including through university research collaborations.

- Technical advice and personal business consultations are available through a network of more than 250 IRAP advisors in 90 communities across the country.
- The advisors work out of 140 technology-related organizations, such as universities, colleges, provincial research laboratories, and technology centres.
- Funding: for small projects ($1,500-$15,000), IRAP's contribution does not exceed 50% of the total project cost. For large projects ($15,000-$350,000), the program provides technical and financial assistance on a selective basis for R&D projects up to and including the test model or pilot plant stage.

Budget: $117 in 1998/99*

Web Site: www.nrc.irap.ca

*Note: Budget figure is based on the level of contributions to firms. It excludes the cost of the IRAP Technology Network to deliver advisory services to SMEs as well as the Canadian Technology Network. The IRAP program has some 60+ specialists located on university campuses for the purposes of accessing technology for addressing the needs of SMEs. The overall IRAP/CTN budget is $140 million annually.

Mettnet Networking Initiative

Who: CIBC and Bank of Montreal

Mandate: To promote small business growth through strategic mentoring and technology transfer services. MettNet links SMEs with resources in universities, research organizations, financial institutions, government agencies and service companies to enable the company to meet business challenges.

Trans-Forum

Who: Industry Canada

Mandate: Trans-Forum is intended to enhance technology and expertise transfer from academia to Canadian business. It is an Internet-based communication and information service which links university industry liaison offices, research institutes and Centres of Excellence across Canada. It provides a list of funding sources, a collection of IP policies of Canadian universities, and success stories on Canadian academic-industry partnerships.

Other Trans-Forum services include:

National Expertise Index (NEI)

Mandate: This initiative increases receptor capacity by providing firms with single window access to hundreds of researchers at universities, federal laboratories and provincial centres of excellence interested in working with industry to resolve key technology challenges. Researchers are found by field of technological expertise. The electronic network currently holds over 14,000 public sector researchers and technology transfer experts.

National Technology Index (NTI)

Mandate: To publicize technology licencing opportunities available for commercialization from provincial and federal laboratories, universities, centres of excellence, and their affiliates. Users can conduct searches for technology opportunities and obtain results that link them to the research organizations own website listings.

Web Site: All Trans-Forum products can be found at http://strategis.ic.gc.ca/SSG/tf00008e.html

Programs That Provide Direct Support for the Commercialization of University Research (development of prototypes, marketing studies, etc.)

Bio Products Centre

Who: Founded by a consortium of biotech researchers and industry partners, including the University of Guelph, McGill University, the University of Saskatchewan, DowElanco Canada Inc., Saskatchewan Wheat Pool, and Philom Bios

Mandate: To facilitate the commercialization of products for crop protection and growth enhancement.

- The Centre will help complete the research, obtain regulatory approval, apply for patent protection, manufacture the product, and bring it to market.

Market Assessment of Research and Technology (MART)

Who: The British Columbia Information, Science and Technology Agency

Mandate: MART covers a portion of the costs (up to 100% or $20,000) for BC universities and colleges and SMEs to hire an external market consultant to conduct a market assessment of new discoveries/innovations. The applicant must possess a new product, process or system that is based on an innovative application of science and technology in BC, or have acquired technology not currently in use in BC from another company or university through a technology transfer process.

National Optics Institute (NOI)

Who: NOI is a private, non-profit corporation

Mandate: NOI employs approximately 70 scientists that test the potential of various optics and phototonics applications and seek to identify commercially viable opportunities. NOI then contacts possible partners, reviews the potential of the product, and develops a plan for development work. Research can be developed either in NOI or externally. If developed externally (business), NOI plays a major role in supporting and advising businesses.

Quebec Biomass and Biotechnology Development Centre

Who: Government of Quebec

Mandate: This Centre is a liaison and transfer society which aims to stimulate industrial and commercial exploitation of scientific research (in activity forest, agri-food, peat and urban biomasses) through partnership and networking. The Centre will help evaluate commercial possibilities, networking links, and firm start-ups.

Technology Commercialization Program (Manitoba)

Who: Manitoba Industry, Trade and Tourism

Mandate: To support Manitoba companies (including university researchers) in the commercialization of technology by providing up to 50 percent assistance towards eligible costs. Support can include business plans, market studies, financial studies, final product or prototype production and evaluation, and legal work for patents and copyrights.

The Technology Commercialization Program (Alberta)

Who: The Alberta Heritage Foundation for Medical Research

Mandate: To assist Alberta innovators with the transfer of new ideas and scientific findings into successful commercial health-related products and processes through grants/loans.

- Structured to promote university/industry/business collaboration with funding to individuals, universities, colleges and hospitals, as well as private industry.

- Program has three main phases:

  Phase I - Maximum award - $35,000. Repayment generally not required. Funding to assess and strengthen the technical aspects of a scientifically sound project to verify its uniqueness and to explore the potential for commercialization.

  Phase 2 - Maximum award - $150,000. Repayment agreement required. Funding to strengthen business and marketing aspects, including working on prototypes, intellectual property protection, clinical trials, and development of detailed business plan.

  Phase 3 - Maximum award - $500,000. Repayment agreement required. Funding available to finalize strategy to take product or process to market.

Technology Partnerships Program Grants

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: To support very applied research at the commercialization end of the R&D spectrum. At the end of the project, the participating company must be able to take the technology to the marketplace.

- One-time grants to university researchers up to a maximum of $150,000 per year for up to three years, with industry partners providing half of the project costs.

Budget: $3 million in 1999/2000

Programs that Build the Management Capacity of Innovators

Mentortech Program

Who: A not-for-profit corporation, Mentortech groups:

- six Ontario universities (Carleton, Lakehead, McMaster, Queen's, Toronto, and Waterloo);
- four Ontario Centres of Excellence;
- the Royal Bank of Canada and the Toronto-Dominion Bank;
- more than 15 industrial and business sponsors;
- NSERC; and
- several prominent mentors in the area of entrepreneurship.

Mandate: Mentortech is a network of experts available to vet ideas, develop business plans, and assist in finding financing. The MentorTech seminar series is currently available on-line at 6 Ontario universities and offers hands-on instruction in licencing technology, starting, building and operating a technology-intensive business.

Technology Commercialization Internship Program

Who: The Alberta Heritage Foundation for Medical Research

Mandate: To provide advanced training and practical experience in moving technology from the research laboratory to commercialization through a one-year internship with an Alberta organization engaged in the commercialization of medical or health-related technology. Candidates for the program must hold, or be in the final year of a degree in business, management, or science from an Alberta institution.

Seed Funding That Targets the Commercialization of University Research

Canadian Medical Discoveries Fund

Who: Medical Research Council and MDS Capital Corp

Mandate: The Canadian Medical Discoveries Fund is comprised of several funds that support promising research and commercialization in Canadian universities and affiliated laboratories. MRC peer review expertise is used to identify promising technologies. The fund:

- Includes a labour sponsored venture capital fund launched with the backing of the Medical Research Council, with assets approaching $300 million;
- Created the Medical Discoveries Commercialization Fund Inc., which targets ideas just emerging from the laboratory, offering legal advice and patent processing assistance in return for right of first refusal to license the intellectual property;
- Includes Med-Tech Partners (opportunities in Quebec universities and research institutes) and Neuro (neuroscience); and
- Typically invests in the $1-5 million range, in return for equity in companies with formal business plans and long-term strategies.

Canadian Science and Technology Growth Fund

Who: strategic alliances with the Natural Sciences and Engineering Research Council (NSERC), the National Research Council (NRC) and the Canadian Space Agency (CSA)

Mandate: To invest in early stage discovery and commercialization of research in the natural sciences, engineering and technology sector.

- 50% of assets to be invested in academic research and early discovery as well as the commercialization of research.

- Each potential investment to be assessed according to:
  - credibility and commitment of its principal investors;
  - uniqueness and global competitiveness of the discovery;
  - potential to protect intellectual property; and
  - potential value and breadth of commercial applications.

Eastern Technology Seed Investment Fund

Who: Bank of Montreal Capital Corporation, Business Development Corporation (BDC) and Ventures West

Mandate: This fund is aimed primarily at commercializing promising research projects at universities and other facilities in Eastern Canada. Also provides entrepreneurial and management skills.

Milestone Medica Corp.

Who: Shareholders are Royal Bank Canada Growth Co. and Research Corporation Technologies (Tuscon, Arizona)

Mandate: This corporation provides funding and management assistance to Canadian universities and research centres in the area of biomedicine.

Polyvalor Inc.

Who: Ecole Polytechnique and the Solidarité Fund

Mandate: The goal of this new company is to commercialize research results emanating from École Polytechnique. Polyvalor is aiming to create between five and seven spin-off companies annually by encouraging professors and researchers to start their own firms.

Budget: $2 M over 5 years ($500,000 over five years in operating capital, with $300,000 in annual seed capital)

T^2C^2

Who: Business Development Bank of Canada, Sofinov (a subsidiary of la Caisse de dépôt et placement du Québec) and Innovatech du Grand Montréal

Mandate: T^2C^2 provides financing and management support for the commercialization of technologies developed in Quebec universities and research institutions.

University Medical Discoveries Inc. (UMDI)

Who: Medical Research Council (MRC)

Mandate: To provide very early stage, high risk capital for the commercialization of Canadian biomedical innovation emanating from Canadian universities.

- Focus is on taking an idea to the point where the optimal commercialization strategy can be determined and implemented. In return, UMDI can take co-ownership of the intellectual property or equity positions in companies subsequently formed.

- UMDI's investments will typically be between $50,000 and $250,000.

Western Technology Seed Investment Fund

Who: Bank of Montreal Capital Corporation, Business Development Corporation (BDC) and Ventures West

Mandate: This fund is aimed primarily at commercializing promising research projects at universities and other facilities in Western Canada.

- Initial commitment is generally in the range of $100,000 to $500,000 for "seed-stage" funding of new products in agriculture biotechnology and other high-tech industries.

Programs that Enable Universities to Operate Effective University Industry Liaison Offices

CIBC Donations

Who: Canadian Imperial Bank of Commerce (CIBC)

Mandate: CIBC has donated over $1 million to specific universities to help them build their technology transfer capabilities.

Intellectual Property Management Program (IPM)

Who: Natural Sciences and Engineering Research Council (NSERC)

Mandate: This initiative helps universities build the infrastructure they need to commercialize research results by providing funding to universities which can be used to train staff, protect IP, patent, collaborate with other institutions, conduct market surveys, etc..

Budget: $3 M/year.

Other

NSERC-SSHRC Program of Chairs in the Management of Technological Change

Who: Natural Sciences and Engineering Research Council (NSERC) and Social Sciences and Humanities Research Council (SSHRC)

Mandate: These awards encourage studying, teaching and training on how technological change and entrepreneurship should be understood and consequently managed. The initiative is intended to:

- improve the management of technological change and innovation in organizations to enhance competitiveness;
- increase technological entrepreneurship;
- facilitate the adoption of new technology in the workplace and in society in general;
- improve the development of public policy and public understanding related to technological change; and
- improve education and training in the management of technological change within and across existing disciplines.

Budget: Up to $1.8 M per year

Tax Incentives

Who: Federal and provincial governments

Mandate: The federal SR&ED program provides tax incentives to Canadian businesses that conduct scientific research and experimental development in Canada. The financial support is intended to encourage businesses, particularly small and start-up firms, to conduct R&D and develop new or improved technologically advanced products or processes. The provinces of Manitoba, New Brunswick Newfoundland, Nova Scotia, Ontario and Quebec also offer various types of special income tax incentives for R&D conducted within their boarders.

Appendix A

Industry Liaison Offices at Canadian Universities, Teaching Hospitals, Technical Institutes, and Colleges

Industry Liaison Offices (ILOs) are the link between industry and the research resources and technology opportunities of the universities, teaching hospitals, technical institutes, or colleges. While ILOs vary to a certain degree, common tasks of ILOs include:

- searching for, and building, strategic partnerships for collaborative research and commercialization;
- negotiating research contracts;
- managing intellectual property;
- licensing;
- patenting issues;
- technology transfer; and
- accessing research funding.

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UNIVERSITY OF ALBERTA, INDUSTRY LIAISON OFFICE, EDMONTON, ALBERTA

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY (BCIT) TECHNOLOGY CENTRE, BRITISH COLUMBIA

BROCK UNIVERSITY, INDUSTRIAL PARTNERSHIPS OFFICE, ST. CATHERINES, ONTARIO

UNIVERSITY OF BRITISH COLUMBIA, UNIVERSITY-INDUSTRY LIAISON OFFICE (UILO), VANCOUVER, BRITISH COLUMBIA

CAMOSUN COLLEGE, CONTRACT TRAINING AND INTERNATIONAL EDUCATION, VICTORIA, BRITISH COLUMBIA

CARLETON UNIVERSITY, TECHNOLOGY AND RESEARCH DEVELOPMENT OFFICE, OTTAWA, ONTARIO.

CHEDOKE-MCMASTER HOSPITALS, HAMILTON, ONTARIO.

CONCORDIA UNIVERSITY, INDUSTRIAL LIAISON UNIT, MONTREAL, QUEBEC.

UNIVERSITY OF CALGARY, UNIVERSITY TECHNOLOGIES INTERNATIONAL INC. (UTI), CALGARY, ALBERTA

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UNIVERSITY OF MANITOBA, INDUSTRY LIAISON OFFICE, FORT GARRY, MANITOBA

NIPISSING UNIVERSITY, RESEARCH OFFICE, NORTH BAY, ONTARIO

NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY, OFFICE OF APPLIED RESEARCH AND PRODUCT DEVELOPMENT, EDMONTON, ALBERTA

UNIVERSITY OF NEW BRUNSWICK, CENTRE FOR RESEARCH AND DEVELOPMENT SERVICES, FREDERICTON, NEW BRUNSWICK

UNIVERSITY OF NORTHERN BRITISH COLUMBIA, FACULTY OF RESEARCH AND GRADUATE STUDIES, PRINCE GEORGE, BRITISH COLUMBIA

NUTECH: NOVA UNIVERSITIES TECHNOLOGY INC., HALIFAX, NOVA SCOTIA

OKANAGAN UNIVERSITY COLLEGE, RESEARCH SERVICES & TECHNOLOGY ACCESS CENTRE, KELOWNA, BRITISH COLUMBIA (CTN)

UNIVERSITY OF OTTAWA HEART INSTITUTE, OTTAWA, ONTARIO.

UNIVERSITY OF OTTAWA, OFFICE OF RESEARCH SERVICES, OTTAWA, ONTARIO.

UNIVERSITY OF PRINCE EDWARD ISLAND, OFFICE OF RESEARCH DEVELOPMENT, CHARLOTTETOWN, PRINCE EDWARD ISLAND

QUEEN'S UNIVERSITY, PARTEQ RESEARCH & DEVELOPMENT INNOVATIONS, KINGSTON, ONTARIO

UNIVERSITY OF REGINA, OFFICE OF RESEARCH SERVICES, REGINA, SASKATCHEWAN (CTN)

SASKATCHEWAN INSTITUTE FOR APPLIED SCIENCE AND TECHNOLOGY, SASKATOON, SASKATCHEWAN

THE SAMUEL LUNENFELD RESEARCH INSTITUTE AT MOUNT SINAI HOSPITAL, UNIVERSITY OF TORONTO, TORONTO, ONTARIO

SHERIDAN COLLEGE, OAKVILLE, ONTARIO

RESEARCH INSTITUTE AT THE HOSPITAL FOR SICK CHILDREN, TORONTO, ONTARIO

SOUTHERN ALBERTA INSTITUTE OF TECHNOLOGY, BUSINESS DEVELOPMENT & INTERNATIONAL TRAINING PARTNERSHIPS (SAIT), CALGARY

SOUTH WINNIPEG TECHNICAL CENTRE, WINNIPEG, MANITOBA

SIMON FRASER UNIVERSITY, UNIVERSITY/INDUSTRY LIAISON OFFICE , BURNABY, BRITISH COLUMBIA

UNIVERSITÉ DE SHERBROOKE, BLEU, SHERBROOKE, QUEBEC

UNIVERSITY OF SASKATCHEWAN, SASKATOON, SASKATCHEWAN:
- USASK OFFICE OF RESEARCH SERVICES
- USASK TECHNOLOGIES INC.

UNIVERSITY OF TORONTO, TORONTO, ONTARIO:
- U OF T INNOVATIONS FOUNDATION, ONTARIO (CTN)
- U OF T RESEARCH AND INTERNATIONAL RELATIONS

UNIVERSITY OF WATERLOO'S TECHNOLOGY TRANSFER LICENSING OFFICE, WATERLOO, ONTARIO

UNIVERSITY OF WESTERN ONTARIO, LONDON, ONTARIO:
- UWO OFFICE OF INDUSTRY LIAISON
- UWO OFFICE OF RESEARCH SERVICES

UNIVERSITY OF WINDSOR, OFFICE OF RESEARCH SERVICES, WINDSOR, ONTARIO

VANCOUVER HOSPITAL & HEALTH SCIENCES CENTRE RESEARCH SERVICES, VANCOUVER, BRITISH COLUMBIA

UNIVERSITY OF VICTORIA, INNOVATION AND DEVELOPMENT CORPORATION, VICTORIA, BRITISH COLUMBIA

YORK UNIVERSITY, INNOVATION YORK, TORONTO, ONTARIO (CTN)

Appendix B

University and College-Related Incubators

British Columbia

THE BCIT VENTURE PROGRAM, BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY, BURNABY

INNOVATION DEVELOPMENT CORPORATION, UNIVERSITY OF VICTORIA, VICTORIA

DISCOVERY PARK - SIMON FRASER UNIVERSITY, BURNABY BUSINESS DEVELOPMENT CENTRE

Alberta

ADVANCED TECHNOLOGY CENTRE, EDMONTON

TECHNOLOGY ENTERPRISE CENTRE (CR&DA), CALGARY

Ontario

THE NORTHWEST ENTERPRISE CENTRE (CONFEDERATION COLLEGE), THUNDER BAY

THE GREATER HAMILTON TECHNOLOGY ENTERPRISE CENTRE, HAMILTON

THE LONDON COMMUNITY SMALL BUSINESS CENTRE, LONDON

Quebec

QUEBEC BIOTECHNOLOGY INNOVATION CENTRE, LAVAL

Atlantic Canada

THE CENTRE FOR COMMUNITY & ENTERPRISE NETWORKING (C/CEN), SYDNEY, NOVA SCOTIA

INCUTECH BRUNSWICK INC., FREDERICTON, N.B. (CTN)

THE GENESIS CENTRE, ST. JOHN'S, NEWFOUNDLAND

Appendix C

Industry Research Centres

AG-WEST BIOTECH

BCRI (BC RESEARCH INC.)

CANADIAN CENTRE FOR MARINE COMMUNICATIONS (CCMC)

CANADIAN ENERGY RESEARCH INSTITUTE (CERI)

CANADIAN HOUSING INFORMATION CENTRE (CHIC)

CANADIAN NETWORK FOR THE ADVANCEMENT OF RESEARCH, INDUSTRY AND EDUCATION (CANARIE)

INDUSTRIAL RESEARCH AND DEVELOPMENT INSTITUTE

OTTAWA CENTRE FOR RESEARCH AND INNOVATION

PRAIRIE AGRICULTURAL MACHINERY INSTITUTE

PRAIRIE SWINE CENTRE (PSCI)

STRATEGIC MICROELECTRONICS CONSORTIUM

WESTERN CANADA TESTING INC.