

Breakthrough Partnerships:

A Guide to Public-Private
Research Collaborations in Ontario



TORONTO REGION RESEARCH ALLIANCE

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ABOUT TRRA

Launched in October 2005, the Toronto Region Research Alliance (TRRA) is an innovative network of regional leaders engaged in transforming the Toronto region into a world-leading centre for research and research-intensive industry. TRRA serves the broader Toronto region, embracing Hamilton, Guelph, the Waterloo Region and the Greater Toronto Area. The board of directors is composed of presidents, chief executive officers and senior leaders from the region's business, research and municipal organizations. TRRA is a results-oriented, non-profit organization supported by a wide range of regional stakeholders and the governments of Ontario and Canada. For more information about TRRA, please visit www.trra.ca.



ACKNOWLEDGEMENT

We would like to acknowledge the comprehensive research undertaken by the Conference Board of Canada in its June 2006 *7th Annual Innovation Report: Lessons in Public-Private Research Collaboration – Improving Interactions Between Individuals*. This resource guide draws extensively on the valuable insights and findings from this report, which offers an excellent knowledge foundation for companies contemplating entering into R&D partnerships with public institutions. Readers who are interested in learning more are encouraged to obtain the full report from the Conference Board of Canada website: www.conferenceboard.ca.

Two broad global trends are changing how companies undertake research. The first is that research is less and less an in-house affair and more and more a question of collaboration with a range of external partners. The second is that research is becoming increasingly global as companies seek the best new ideas and discoveries to improve existing products and services and create new ones.¹ In this context, the capacity to undertake successful R&D partnerships with public research institutions is becoming increasingly important to innovation-driven firms.

Public research institutions play a critical role in supporting private-sector innovation by supplying cutting-edge science, generating new ideas and knowledge, and developing new talent.

Because leading publicly funded scientists operate within global scientific networks and continuously interact with peers and students from around the world, they offer an important channel for companies to access the best new ideas and technological developments globally, while exposing their own staff to innovative new ideas and approaches. By virtue of a suite of public programs targeting research and collaboration, companies can also access important R&D funding support through such relationships and by undertaking joint projects with researchers in public institutions.²

The purpose of this resource guide is to outline the specific benefits of such partnerships for Ontario companies, to offer the most up-to-date insights on key challenges and best practices, and to provide a single easy-to-use source of information on the resources available to support industry R&D partnerships with public research institutions.

TRRA is indebted to the Conference Board of Canada for its comprehensive research in this area, captured in its June 2006 7th *Annual Innovation Report: Lessons in Public-Private Research Collaboration – Improving Interactions Between Individuals*. This resource guide offers a summary of some of the valuable insights and findings from the Conference Board's report, combined with a guide to key federal and provincial government programs and Ontario organizations that can assist companies interested in forging R&D partnerships with public research institutions. It is designed with a practical focus in the hope that it will serve as a useful tool for companies of all sizes, enhancing both the likelihood and success of future R&D collaborations with public partners.



Benefits for Your Company

R&D collaboration with public research institutions offers many potential benefits to companies engaged in innovation. The Lambert Review of Business-University Collaboration, undertaken for the Government of the United Kingdom in 2003, presents data (see Figure 1 below) showing that businesses which collaborate with universities are more likely to perform well against a range of success indicators than those that do not engage in such collaborations.

FIGURE 1 THE RELATIONSHIP BETWEEN BUSINESS PERFORMANCE AND COLLABORATION³

	Increased range of goods and services	Opened new market or increased market share	Improved quality of goods and services	Reduced unit labour costs
Enterprises which do not use universities as a partner	42%	40%	46%	33%
Enterprises which use universities as a partner	82%	81%	85%	65%

Source: Community Innovation Survey, (UK), Dtions, 2001.

Additional industry benefits specific to industry-research institution R&D collaboration are set out in the table below⁴:

ENHANCED ACCESS TO KNOWLEDGE

Access to global networks of experts and potential collaborators

Leading public researchers are tied into global research networks that enable them to monitor and learn from cutting-edge work globally and across disciplines. Collaboration enables companies to link into these networks, to identify potential partners and to keep track of relevant scientific and technological developments in diverse fields in real time.

Employee access to cutting edge knowledge and ideas that enhance R&D quality

By leveraging outside expertise, company employees are exposed to new ideas and technological developments that they can then apply to their own R&D work.

Competitive technology intelligence and advantage

Collaborations expand access to ‘warm’ intelligence on new technologies and competitors that can be used to secure first mover and other competitive advantages.

ABILITY TO LEVERAGE R&D DOLLARS

R&D cost savings and opportunity to leverage government funds

Access to research and technical resources and facilities

Partnerships with public institutions enable companies to leverage public research investments and to access additional government funding support for their R&D programs.

Companies can access research facilities and equipment through partnerships that would otherwise be unavailable to them by virtue of their scale and cost.

ACCESS TO TOP NEW TALENT

Opportunity to identify and recruit talented new employees

Academic partnerships give companies access to, and the opportunity to work with, highly skilled and talented researchers – ideal recruitment targets.

ENHANCED CREDIBILITY AND REPUTATION

Enhanced scientific credibility and organizational reputation

Research partnerships enable companies to work with top scientists to enhance and validate their R&D initiatives and increase their scientific credibility. This provides competitive advantages and helps build their organizational reputation.





Key Lessons for Success

A CROSS-CULTURAL EXPERIENCE

While R&D collaboration offers clear benefits, companies and academic researchers approach research from very different perspectives and this needs to be taken into account when companies consider partnerships and how to implement them. In the case of industry, the clear goal is to generate profit for the company.⁵ In the case of public researchers, the goal is knowledge generation and the opportunity to disseminate this knowledge through publication.⁶ These differences do not in any way preclude collaboration, but they do have implications that companies should be aware of and prepared to manage.

TIMELINES

Because companies operate in a highly competitive context where time is a critical element, they generally seek results quickly that will provide them with clear strategic and near-term value.⁷ In an academic context, however, the emphasis is primarily on knowledge generation and the training of students over longer time frames.⁸ This difference in the relative value assigned to time needs to be taken into account when establishing project expectations and timelines.

FOCUS

Academic research is most often curiosity-driven. While this has generated innumerable breakthrough discoveries, it means that public researchers often need to consciously adopt a

different mindset with a tightly constrained problem focus in order to achieve the kinds of targeted and timely outputs industry requires.⁹

VARYING LEVELS OF RISK

Companies and research institutions also typically face different levels of risk with regard to shared R&D projects.

While research institutions and academic researchers face few negative consequences in the event a research project is unsuccessful, the same cannot be said for company personnel involved or even the companies themselves. The careers of industry personnel can be affected by the outcomes of research collaborations, with significant risks associated with failure. Academic researchers, while they may benefit from a successful project, are far less at risk personally if a project fails.¹⁰

While large firms typically collaborate on projects that are not central to their core business, small firms usually collaborate to advance the development of technologies that are at the very core of their business. When this is the case, a failed project can severely undermine the success of the company or even drive it to fail.¹¹ Small businesses can minimize this risk by focusing collaborations with academic institutions on projects that their business does not depend on, that do not have tight time frames and that do not require large investments.

GETTING IT RIGHT¹²

Industry-academic R&D partnerships can take a variety of forms. These range from **consultancy** to **contract research** to **collaborative research**.

In a **consultancy** relationship, a company will purchase advice or analytic services, generally from individual academics. This does not involve research *per se*. This is one of the simplest ways for businesses to interact with academic researchers and draw on their research. The cost is relatively low and accessible to small- and medium-sized enterprises (SMEs) and transactions are quite straightforward and simple to arrange. Consultancy also offers companies an opportunity to get to know a researcher before embarking on a more intensive partnership. Many research contracts in fact originate from a consulting relationship.

In the case of **contract research**, a company will pay academic researchers to undertake a specific piece of research on its behalf. The business obtains the research results but does not actively participate in the research itself. Contract research can offer companies a flexible and cost-effective means to achieve their research and development objectives while reducing their own R&D costs by outsourcing.

In the third type of partnership, **collaborative research**, business and academic researchers perform research together on a shared problem. Generally, this research is co-funded by the

company in question and a public or non-profit research funding body via research grants to academic researchers. Research in the UK suggests that while in the past companies entered into collaborative research partnerships with a wide variety of partners, many are now cutting back on the number of partnerships to focus on a smaller number of strategic, long-term collaborative relationships with selected partners. By virtue of working together, industry and academic researchers develop trust and share information, thereby increasing the likelihood of breakthroughs they might not otherwise achieve independently. This form of research partnership is considered the most effective with respect to knowledge transfer.

TACKLING IP OWNERSHIP

While highly desirable, R&D collaborations invite the difficult question of who owns the intellectual property or IP. Addressing this question can often involve protracted and costly negotiations that detract from the net benefit of the initiative and can, if unsuccessful, sometimes preclude collaboration altogether.

In general, the rewards from research collaborations should reflect the relative contributions of the parties.¹³ Companies need secure rights to any IP they want to commercialize. However, agreements should not unduly constrain academic partners from

realizing their objectives such as publishing results in a timely fashion, doing further research in the same area, or developing additional applications of the same IP in other fields of use.¹⁴

Striking the appropriate balance along this spectrum can be challenging. To assist in this process, some research institutions are developing master contracts in consultation with industry to serve as templates, thereby streamlining the negotiation process. Companies should inquire of potential academic partners whether their institutions have such contracts.

MAXIMIZING SUCCESS

In general, research collaborations become easier and more successful with experience. That said, however, attention to some key elements at the outset of projects can greatly maximize the likelihood of success. Through its research, the Conference Board of Canada has identified five critical success factors for industry-academic R&D partnerships:

- Choosing a partner
- Building trust
- Open communication
- Project preparation and management
- Securing internal champions and support.¹⁵

Each of these is explored in more detail below.

CHOOSING A PARTNER¹⁶

Selecting the right partner is a critical first step. Most companies rely on personal, informal assessments of fit; some are adopting a more systematic due diligence approach. While there is no one way to approach the question of whom to partner with, take the time to assess partners carefully and look beyond just skills and expertise to ensure that other softer, yet equally important, factors such as philosophical approach, work style and personal chemistry are complementary to those of your company and personnel.

BUILDING TRUST¹⁷

For collaborations to succeed, there must be sufficient trust for you and your academic partner to identify and discuss problems frankly and honestly, and to preclude the need for micro-management on all sides. Because trust is rooted in the personal character of the people involved, it can be established from the beginning on the basis of reputation or referral from a trusted third party. Alternatively, you and your partner must build it gradually by steadily delivering on commitments.

OPEN COMMUNICATION

Trust and communication are mutually reinforcing, but in new relationships where trust has not yet been established, communication is more important than ever.¹⁸ Successful collaborations require that company and academic research teams both commit to constant open communication and a high degree of mutual responsiveness.¹⁹

This may also involve developing a common “language” for the project and investing the time necessary to understand the work, field, knowledge and technical expertise of your partners.²⁰ Face to face communication is always desirable and sometimes critical, particularly where new relationships are involved.²¹ However, while proximity is critical for some collaborations, it may be a luxury or impossibility for others and efforts must be made through other means of communication to offset this distance.²²

PROJECT PREPARATION AND MANAGEMENT²³

As with any collaboration, clarity with regard to the objectives and needs of both partners is essential. Partners should also strive to eliminate all ambiguity with regard to decision-making (e.g. who owns which decisions?). Reporting and accountability protocols may be helpful in this respect. In terms of project management, academic partners may be less experienced when it comes to fundamentals that companies take for granted, such as setting milestones and progress monitoring. It may be useful to articulate defined performance measures and time frames, particularly in the case of new collaborations. In longer standing collaborations with trusted partners, these are not as critical and may not be necessary. It is important to remember that academic partners are not consultants and companies should not expect to work with them exactly as they would a private-sector contractor. One of the consequences of this is that companies should anticipate longer time frames for achieving deliverables.

SECURING INTERNAL CHAMPIONS AND SUPPORT²⁴

Successful research collaborations almost always have a high-level, executive champion. This increases cooperation from other company staff, ensures continuation of the project in the event of personnel turnover and enables progress overall. It is also necessary, however, to actively communicate the benefits of your project to other people in your company to demonstrate its relevance to the company’s objectives and to secure their support and cooperation. Academic partners should be encouraged to seek similar high-level support in their own organizations and to actively communicate the benefits of the project to their own institutions.



Resources for Companies

In recent years, governments have become increasingly focused on the benefits of greater business-academic interaction as a means of fostering innovation, capturing greater economic benefit from public investments in research and enabling companies to become more productive and competitive.

As a result of this growing interest, a broad variety of resources are now available to companies considering entering into R&D collaborations with public research institutions.

The following section provides summary information on individual federal, provincial and regional programs and organizations that offer financial, information and facilitative resources and supports that companies may wish to access.

The objectives and key parameters of each resource are described, together with information on eligibility and how to apply (where necessary), and where to obtain further information.

This guide does not include tax-based incentives designed to encourage private-sector use of R&D capacities within universities and colleges, such as the Ontario Business-Research Institute Tax Credit (OBRITC), or more general tax-based incentives for R&D, such as the federal Scientific Research and Experimental Development (SR&ED) program.

For more information on these programs, please visit: OBRITC: www.fin.gov.on.ca/english/tax/2000/tb002.html
SR&ED: www.cra-arc.gc.ca/taxcredit/sred/menu-e.html

PROGRAMS OFFERING DIRECT SUPPORT

Advancing Canadian Agriculture and Agri-food (ACAAF) Program

Agriculture and Agri-food Canada (AAFC) Agri-innovation Program

AUTO21 Network of Centres of Excellence Program

Canadian Space Agency Programs and Services

Communications Research Centre of Canada – Innovation Centre

DND/NSERC Research Partnership Program

ITCAN Science and Technology Program

Networks of Centres of Excellence Program (Industry Canada)

National Research Council - NRC Expertise

National Research Council Industrial Research Assistance Program

National Research Council Industry Partnership Facilities

NSERC Collaborative Research and Development Program

NSERC Industrial R&D Fellowship Program

NSERC Industrial Research Chairs

Ontario Centres of Excellence Research Program

Ontario Centres of Excellence Talent Program

Ontario Research Commercialization program

PRECARN Incorporated

Sustainable Development Technology Canada

OTHER RESOURCES

BioDiscovery Toronto

Genome Canada

Golden Horseshoe Biosciences Network

Guelph-Waterloo Partnership in Biotechnology

Innovation Synergy Centre in Markham

MaRS Centre

Ontario Cancer Biomarkers Network

Ontario Institute for Cancer Research

Ottawa Life Sciences Council

Peterborough DNA Cluster

Southwestern Ontario Bioproducts Innovation Network

Toronto Region Research Alliance

YORKbiotech

Programs Offering Direct Support



ADVANCING CANADIAN AGRICULTURE AND AGRI-FOOD (ACAAF) PROGRAM

OBJECTIVE

The objectives of the Advancing Canadian Agriculture and Agri-Food Canada (ACAAF) program are to:

- Expand the sector's capacity to respond to current and emerging issues
- Position the sector to capture market opportunities
- Actively and continuously engage the sector to contribute to future agriculture and agri-food policy directions
- Integrate sector-led projects tested and piloted under ACAAf into future government or industry initiatives.

The goal of ACAAf is to position Canada's agriculture and agri-food sector at the leading edge to capture new opportunities. Ideas that lead to better products, processes and technologies need to be developed, tested and advanced for use throughout the sector.

DESCRIPTION

Under the ACAAf program, funding is available for eligible projects identified and carried out by the agriculture and agri-food sector.

The ACAAf program is delivered under the following three "pillars":

- 1 Industry-led solutions to emerging issues** supports projects that test or pilot approaches and solutions
- 2 Capturing market opportunities by advancing research results** supports projects that transfer research results into market opportunities
- 3 Sharing information to advance the sector** supports projects aimed at gathering, analyzing and sharing information to contribute to future agriculture and agri-food policy directions.

Fourteen Industry Councils, established under CARD, deliver regional ACAAf programming in their respective province or territory by providing funding to support eligible projects. Projects of a local, regional or multi-regional nature should be directed to the appropriate council established in each province and territory.

Funding is not ongoing, but is provided for a limited period to help the sector resolve an issue or capture opportunities. Funding cannot be used as direct income support, for basic research, or to support ongoing activities or normal commercial expansion. ACAAf support to individuals and for-profit organizations will generally be provided as repayable contributions.

Reports and public documents developed as part of a project must be made available in both official languages.

ELIGIBILITY

Eligible recipients must be legal entities and may include: not-for-profit organizations and associations; universities; colleges; cooperatives; marketing boards; aboriginal groups; individuals and for-profit companies. National industry organizations and other eligible recipients may apply for ACAAf funding through an open application process. Funding is conditional on recipients meeting all program requirements, including adherence to the Federal Identity Program, *Official Languages Act* and ACAAf performance management and audit requirements.

All ACAAf projects must meet the following general criteria:

- Projects must fall within the parameters of the program's three pillars
- Priority will be given to projects where the proposal demonstrates direct industry financial support and partnerships/alliances with others
- Applicants must be able to demonstrate the economic viability and longer-term self-sufficiency of their proposal, where the nature of the project warrants
- Applicants must demonstrate how their proposed project contributes to the public good, including, but not limited to, economic benefits for Canada
- Applicant is a Canadian entity (this requirement refers only to the legal jurisdiction of the entities), citizen or permanent resident.

In addition, projects must meet the following specific criteria:

Pillar 2 projects Funding will be restricted to pre-commercialization activities such as: technical analysis; adaptive research; market assessment and venture assessment; technical feasibility; market and economic feasibility studies; engineering prototypes; strategic market and business plans; the development of production prototype and demo product features; and other related activities if deemed eligible by AAFC.

Priority will be given to funding small and medium Canadian enterprises (defined as 500 full-time equivalent positions or less).

Funding will not be provided for applied research under this pillar. Funding for adaptive research will not normally exceed 20 per cent of total project costs.

Pillar 3 projects Funding will not be provided to support ongoing activities, including regular meetings, such as annual general meetings of organizations or attendance at a trade show or conference (unless this activity is part of a broader suite of activities included in a project that is designed to achieve a specific outcome).

ACAAF now has a continuous intake process so there is no specific application deadline. Further information regarding the application process and eligibility requirements for national projects can be found at: www.agr.gc.ca/acaaf/information/acaafapply_e.html

For more information: Please email ACAAf at acaaf@agr.gc.ca or contact:

National
 Director, Adaptation Division
 Agriculture and Agri-Food
 Canada
 T (613) 759-6175

Ontario
 Agricultural Adaptation Council
 T (519) 822-7554
 F (519) 822-6248
 E info@adaptcouncil.org



AGRICULTURE AND AGRI-FOOD CANADA (AAFC) AGRI-INNOVATION PROGRAM

OBJECTIVE

This program is designed to accelerate the rate of identification, assessment, development and adoption of innovation-based products, thereby providing new market-oriented commercialization opportunities for the agri-food sector.

DESCRIPTION

Agri-Innovation is a contribution program providing funding assistance towards:

- Identifying key agri-innovation opportunities
- Undertaking applied scientific and pilot processing activities undertaken in facilities which include centers of innovation and incubators
- Undertaking innovation acceleration associated with new business and market opportunity development.

The program is designed to:

- Draw on existing, or develop new, agriculturally-related value chains
- Identify and technologically assess traditional and new commodities and their components for use in a wide range of new products and markets
- Enhance the rate of identification and adoption of new science-based innovations using agricultural inputs through transformational/proving techniques and processes
- Move producers and rural communities up the value chain, increasing their share of agri-sector income.

Key areas of focus are:

Agri-food, value-chain innovation to improve collaboration along existing and new value chains, to identify and proof opportunities, and assess risks associated with new markets that utilize agricultural inputs. Projects will strengthen existing linkages, and/or create new relationships as a means of accelerating the adoption of new innovations and of improving producer and rural community value shares of agri-sector incomes.

Projects will bring together key players along entire value chains and be a mechanism for cooperative effort among all parties, identifying value-added innovation through improved coordination among research, production and marketing organizations.

Agricultural bioproducts assessment and adoption to assess and proof new transformational uses of agricultural products through an integrated approach across scientific and business disciplines. Projects will originate from national, provincial or regional bioproducts organizations or initiatives that target bioproduct industry development, through applied and adaptive research.

Projects may be undertaken in technological innovation centers, incubators and applied or adaptive research facilities. Outputs from these will be used in enhanced foods (nutraceutical and functional ingredients of foods), animal feed products and as components in a wide range of non-food, industrial uses, for example new sources of energy, lubricants, composites and environment products.

Funding may be provided for development and start-up costs associated with activities undertaken in centers of innovation and incubators and for some business development activities.

Innovation Acceleration to facilitate the downstream application of new innovation in business settings. Activities will allow new economic opportunities to be assessed and confirm products for use in new areas. Funding can be provided to facilitate integration activities for bioproduct industry development (the provision of information required to obtain regulatory approval), for sharing of outcomes of trials with industry professionals (outreach and communications) and for agricultural bioproducts facilities and research and application systems.

ELIGIBILITY

Organizations or entities (e.g. cooperatives, commodity groups, agri-businesses, provincial or municipal governments, universities or colleges) that represent or involve agriculture are eligible for consideration.

You can apply by sending a Letter of Intent (two-page initial proposal) to the Agricultural Policy Framework (APF) Science and Innovation Coordinator. Deadline: 2008-03-31.

For more information:

Ontario

Philip Malcolmson
Manager, Research & Innovation Branch
Ontario Ministry of Agriculture, Food and Rural Affairs - OMAFRA
Guelph, ON N1G 4Y2
T (519) 826-4167 F (519) 826-4211
E Phil.Malcolmson@omaf.gov.on.ca

Michael Metson

Science and Innovation Coordinator (Ontario)
Ontario Regional Office
Agriculture and Agri-Food Canada
174 Stone Road West, Guelph, ON N1G 4S9
T (519) 837-5853 F (519) 837-9782 E metsonm@agr.gc.ca
www.agr.gc.ca/index_e.phtml

National

Lorne Heslop
Director, APF Science and Innovation
Agriculture and Agri-Food Canada
Sir John Carling Building
930 Carling Avenue, Ottawa, ON K1A 0C5
T (613) 759-7798 F (613) 759-7797 E heslopl@agr.gc.ca
www.agr.gc.ca/index_e.phtml



AUTO21 NETWORK OF CENTRES OF EXCELLENCE

DESCRIPTION

AUTO21, a Network of Centres of Excellence (NCE), is enhancing Canada's position as a leader in automotive research and development. With an annual research budget of approximately \$12 million, AUTO21 and its private and public-sector partners fund innovative projects in six key areas that the automotive industry deems critical for current and future success:

- Health, safety and injury prevention societal issues
- Materials and manufacturing
- Powertrains
- Fuels and emissions
- Design processes
- Intelligent systems and sensors.

More than 230 researchers at 39 Canadian universities work with more than 120 industry and public-sector organizations. Each project is led by an expert researcher who coordinates a team of investigators and oversees a blend of support from AUTO21 and industry and public-sector partners. This team approach ensures the project focuses on the issues relevant to the sector's needs.

Industry and public-sector organizations provide support to the AUTO21 Network in exchange for early commercialization opportunities and access to Canada's best researchers and tomorrow's leaders through the training of highly qualified people (student researchers). Intellectual property agreements negotiated between AUTO21 and its partner organizations are flexible to ensure all stakeholders derive maximum benefit from their investments.

ELIGIBILITY

AUTO21 is currently soliciting industry interest for automotive-focused research projects to be conducted over 24 months commencing April 1, 2008 contingent upon the renewal of the AUTO21 Network of Centres of Excellence. A decision on the renewal of AUTO21 is expected to be announced approximately December 2007. The maximum AUTO21 support available for these research projects will be approximately \$1.5 million in each of the two years 2008-9 and 2009-10.

The Network expects to fund approximately six to eight projects in the following priority areas:

- Improving societal benefits and the health and safety for vehicle occupants and manufacturing workers
- Reducing environmental impact of vehicles, materials and manufacturing
- Enhancing the competitiveness of Canada's automotive sector

For more information:

If you would like assistance in gathering a potential research team to investigate an issue critical to your business, please contact Anne Cascadden, AUTO21 Network Manager at 519.253.3000 x4135 or anne.cascadden@auto21.ca.



CANADIAN SPACE AGENCY - (CSA)

OBJECTIVE

The mandate of the Canadian Space Agency (CSA) is to promote the peaceful use and development of space, to advance the knowledge of space through science, and to ensure that space science and technology provide social and economic benefits for Canadians.

DESCRIPTION

The CSA's **Space Science Program** receives proposals from researchers in universities, research organizations and industries across the country. These are most often in response to Announcements of Opportunity or Requests for Proposals posted on the CSA website for experiments or instrumentation within specific programs. Unsolicited proposals are also considered.

Once a proposal has been accepted, the project receives both financial and managerial assistance from the Space Science Program or through the Natural Sciences and Engineering Research Council of Canada (NSERC) which, along with the CSA, matches private-sector funding (dollar for dollar) in support of jointly approved university projects.

Proposals to be funded are selected by the Space Science Program's advisory committees. Established to give advice in each area of Space Science (comprised of Space Environment; Atmospheric Environment; Space Astronomy; Microgravity Sciences; Space Life Sciences; and Space Exploration), these committees make recommendations to the program after assessing each proposal in terms of its scientific merit, technical feasibility and commercial potential.

CSA also works extensively with space companies and other partners, through its **Generic Space Technologies** service line, to help them develop and test strategic technologies in specific niches, build links with strategic foreign partners to participate in international ventures and to ensure their access to the global marketplace. To carry out these tasks, the CSA also needs an in-house core of institutional expertise, R&D capabilities and knowledge of world-wide technology advances.

The **Space Technologies Development Program (STDP)** extends and supports the CSA's in-house R&D initiatives as well as promotes cooperative ventures between the CSA, industry and universities. An important factor to consider is the potential for the proposed R&D to commercialize technologies in space and non-space markets (i.e. spin-offs). Priority is given to the development of innovative, leap-frog technologies in the fields of robotics and automation, communication and sensor payloads, and spacecraft technology.

For more information:

Space Science Program

Roger Colley
Acting Director General
T (613) 990-0798 F (613) 952-0970 E roger.colley@space.gc.ca
www.espace.gc.ca/asc/eng/csa_sectors/space_science/space_science.asp

Space Technologies Development

Gilles Leclerc

Director of Technology Management

T (450) 926-4608 F (450) 926-4696 E gilles.leclerc@space.gc.ca

www.space.gc.ca/asc/eng/industry/stdp.asp

General

Communications Branch

Canadian Space Agency

6767, route de l'Aéroport, Saint-Hubert, QC J3Y 8Y9

T (450) 926-4351 F (450) 926-4352



COMMUNICATIONS RESEARCH CENTRE OF
CANADA - INNOVATION CENTRE

OBJECTIVE

The CRC Innovation Centre's focus is helping young companies grow. CRC also accepts established companies requiring CRC expertise or facilities to carry out R&D on a new product. Growing Canadian firms trying to develop new communication products or services without major investments in capital equipment and facilities stand to benefit from the Innovation Centre program.

DESCRIPTION

The CRC Innovation Centre provides small (including start-up) and medium-sized Canadian companies with access to CRC technologies, expertise and specialized facilities and testbeds. For a fee, the Innovation Centre can provide furnished or unfurnished office space as well as access to laboratories and specialized equipment. The Innovation Centre also provides access to excellent networking opportunities and business resources. Innovation Centre clients, have access to:

Affordable space

- Furnished offices, office equipment and laboratory space at affordable rates
- A secure site which can help to lower insurance rates
- Space allocation and fee schedules are tailored to client needs, based on service use.

World-class researchers

More than 230 research scientists, engineers and technologists, who are leading experts in their fields, which include:

- Radio science
- Terrestrial wireless
- Broadcast technologies
- Satellite communication systems
- Broadband network systems
- Microelectronics and optical technologies

Leading-edge technologies

A sophisticated portfolio of patents and protected technologies ready for commercial exploitation, including:

- Advanced audio, video and multimedia systems
- Image and sound compression, transmission and processing
- Microelectronic devices and processing
- Advanced optical and component systems
- Indoor and mobile communications
- Fixed and mobile satellite communications.

UNIQUE FACILITIES

Satellite communications

- Earth-Space Propagation Measurement Facility
- Radio Channel Characterization Laboratory

Broadband network technologies

- Broadband Applications and Demonstration Laboratory (BADLAB)
- Microelectronics Facility

Terrestrial wireless

- Digital Integrated Circuit CAD and Test Facility
- Microwave Component Development and Measurement Facility
- Wireless and Inter-networking Systems Experimentation Laboratory
- Antenna Test Facility
- Electromagnetic Compatibility Measurement Laboratory

Broadcast technology

- Advanced Video Systems
- Advanced Audio Systems
- Television Systems and Transmission
- Radio Broadcast Systems and Transmission

Business development assistance

- Referral to an Industrial Technology Advisor from the NRC Industrial Research Assistance Program (NRC-IRAP)
- Help finding funding specialists
- Access to economic development groups such as the Ottawa Economic Development Corporation (OEDC)
- Invitations to business breakfast meetings, courses, marketing opportunities (e.g. trade shows)
- Access to Industry Canada business development programs offering international marketing assistance, business diagnostic services, partnering, technical seminars and business information services.

Networking opportunities

- Direct links to universities and CRC's R&D partners
- Opportunities to network with other incubating companies at various stages of growth and development
- Memberships in the: Federal Partners in Technology Transfer (FPTT), Ottawa Centre for Research and Innovation (OCRI), National Business Incubators Association (NBIA) and Canadian Association of Business Incubators (CABI), providing networking opportunities, invitations to industry events and access to specialized technology databases.

Centralized support services

- Library access to more than 300 subscriptions and 15,000 documents related to telecommunications, patent and bibliographic searches, acquisitions and cataloguing available on a contractual basis.
- Technical Support Services: IT support, graphic arts design and production, technical design (CAD/CAM), printed circuit board prototyping and model shop services
- Auditorium
- Conference rooms
- Cafeteria and catering services, including private dining room
- Fitness facility
- Mail, shipping and receiving.

ELIGIBILITY

Canadian corporations with a:

- Specific need for CRC technology, expertise or access to testbeds
- Business plan
- CRC sponsor/mentor willing to support their proposal.

The CRC Innovation Centre manager will meet with you to discuss your needs and see whether there is a CRC researcher working in a compatible R&D area. If all parties agree that there is a good match and are willing, then the researcher may become the company's sponsor/mentor.

For more information:

Marie Lussier
Communications Research Centre Canada
Industry Canada
3701 Carling Avenue West
Box 11490, Station H, Ottawa, ON K2H 8S2
T (613) 991-1635 F (613) 998-5355 E marie.lussier@crc.ca
www.crc.ca/en/html/crc/home/innovation/innovation



DND/NSERC RESEARCH PARTNERSHIP PROGRAM

OBJECTIVE

A key strategic goal of the Department of National Defence (DND) and the Natural Sciences and Engineering Research Council of Canada (NSERC) is to collaborate fully in the development of an innovative, knowledge-based economy.

- The DND/NSERC Research Partnership Program aims to capitalize on the complementary R&D capacity existing within universities and DND in order to:
- Generate new knowledge and support the development of new technical capabilities relevant to the development and application of dual-use technologies in selected areas of interest to both DND and NSERC
- Build strong two- and three-way linkages and create synergy between researchers in DND and universities and the private-sector
- Achieve the efficient and effective transfer of research results and technology to identified receptors in the public and the private-sector
- Train and develop highly qualified personnel in priority areas consistent with the future human resource requirements in the public and private-sectors.

DESCRIPTION

DND and NSERC will provide funding for university-based research, research training and research-related activities carried out in collaboration with DND and Canadian-based companies.

The program will support unclassified university-based research dedicated to the development of non-weapon specific technologies with dual-use applications oriented towards the objectives of DND and with broader commercial applications.

The maximum value of the research grants made available under this program is normally limited to \$500,000 per project. Requests exceeding this amount will only be considered under special circumstances and on a case-by-case basis.

Eligible activities include research projects and research programs (composed of a number of related research projects).

Approved activities may be supported for terms of up to five years with funding beyond the first year contingent upon evidence of satisfactory progress and, where applicable, evidence of continuing support from the industrial partner(s).

Proposals should address the following priority research areas as agreed by DND and NSERC:

Electronics Technologies for ensuring the secure transmission of information over the entire electromagnetic spectrum

Undersea Systems Undersea sensor and response systems, including integration of undersea systems

Information Systems Integration of technologies for decision-making and for distribution of data and information among users

Air Vehicles Technologies and their integration that relate to flight in the earth's atmosphere

Naval Platforms Technologies that relate to the safe, efficient and effective operation of surface ships and underwater vehicles

Mobility Systems Technologies that affect mobility of land vehicles

Surveillance Systems Exploiting the electromagnetic spectrum for detection, tracking and classification of objects

Human Systems Integration Technologies supporting maximization of personnel readiness and performance through effective training strategies, human information processing, and human-computer and human-machine interfaces

Life Support Systems Technologies concerned with human effectiveness, protection, health, safety and survival in operational environments.

ELIGIBILITY

The program is open to academic staff members of Canadian universities. Applicants must satisfy normal NSERC eligibility criteria as outlined in NSERC's *Program Guide for Professors*.

To be eligible for support, a proposal must involve a collaborative effort with at least one eligible industrial partner and/or at least one DND Scientific Authority. It must also include information about intellectual property agreement(s) being negotiated or in place that specifically address the disposition of intellectual property rights coming into and/or emanating from the proposed research project.

An eligible industrial partner is a single Canadian-based firm or consortium of companies incorporated and operating in Canada. The industrial partner(s) must include at least one eligible industrial partner but can include other eligible and non-eligible companies.

Proposals are evaluated on the basis of:

- Relevance to DND and NSERC research priorities
- Merit of the research proposal
- Interactions and partnerships
- Training
- Management and budgeting
- Company contributions

Cash and in-kind contributions from industry are recognized by the program as eligible contributions and valid commitments if they are used to defray the direct cost of the proposed activity. Cash contributions from industry not recognized by the program include payments toward university overheads, licensing fees, faculty honoraria and consulting fees. The company can make an in-kind contribution (at fair market value and standard labour rates) in addition to the cash contribution. The recognized company contribution is the total cash or cash and in-kind and this contribution may be matched by the program on the basis of a 2:1 ratio, i.e. the program may contribute up to two dollars for

every dollar invested by the company. Normally, the value of the auditable in-kind contributions recognized by the program will not exceed the value of the cash contribution.

All applications must involve at least one partner from outside of the academic sector to be eligible. Only in exceptional circumstances will applications without industrial support, or involving in-kind only contributions from industry, be accepted in this program.

With regard to the ownership of intellectual property rights resulting from the research, refer to NSERC's Policy on Intellectual Property in the *Program Guide for Professors*.

As a first step, applicants must contact the DND scientific authority to ensure that the proposed research activity aligns with DND research priorities. Research proposals must be submitted on NSERC forms. Proposals can be submitted at any time using Forms 100, 101 and 183A. Full instructions for professors and their industrial sponsors on how to complete the forms and on-line submission are found on NSERC's On-line Services page.


The original application plus six copies can be submitted at any time throughout the year to:

DND/NSERC Research Partnership Program
Natural Sciences and Engineering Research Council
350 Albert Street, Ottawa, ON K1A 1H5

For more information:

Questions about the program, its objectives, policies, completion of forms, etc. should be addressed to:

Rémy Chabot
Program Officer
Research Partnerships Programs
DND/NSERC Research Partnership Program, NSERC
T (613) 995-5667 F (613) 992-5337 E remy.chabot@nserc.ca
www.nserc.gc.ca/index.htm

 **ITCAN SCIENCE AND TECHNOLOGY
PROGRAM — FOREIGN AFFAIRS AND
INTERNATIONAL TRADE CANADA (DFAIT)**

OBJECTIVE

The Science and Technology Program of International Trade Canada strengthens Canada's science and technology capacity and promotes international business by:

- Gathering international science and technology insights
- Facilitating the access of Canadian research institutions, universities and firms to international research and development (R&D) opportunities
- Contributing to the development of Canada's science and technology and foreign policy.

DESCRIPTION

The Program focus is on international R&D collaboration, up to the point of commercialization. To carry out its work, the program:

- Manages a network of counselors and relies on Trade Commissioner Service Officers for the collection and dissemination of information on foreign S&T policies and technology developments
- Coordinates Canada's bilateral S&T agreements
- Manages a proactive venture financing program to support emerging Canadian technology firms in accessing venture capital sources in targeted overseas markets
- Organizes missions to selected overseas markets to help Canadian researchers and technology firms explore international research and technological collaboration
- Promotes Canada as an innovative S&T-based country.

ELIGIBILITY

This program is available to Canadian companies, universities, Canadian research institutes and government science-based departments and agencies.

For more information:

Danièle Ayotte
Director, Science and Technology Division
Foreign Affairs and International Trade Canada
Sussex Pavilion, 111 Sussex Drive, Ottawa, ON K1A 0G2
T (613) 995-2224 F (613) 944-2452 Toll 1-800-267-8376
TTY (hearing impaired): (613) 944-9136
E daniele.ayotte@international.gc.ca
www.infoexport.gc.ca/science/



NETWORKS OF CENTRES OF EXCELLENCE PROGRAM, INDUSTRY CANADA

OBJECTIVE

The NCE Program fosters partnerships between university, government and industry to develop Canada's economy and improve the quality of life of Canadians.

DESCRIPTION

Three Canadian federal granting agencies – the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council of Canada (SSHRC) – and Industry Canada combine their efforts to support and oversee the NCE initiative.

The NCE invests in national research networks that meet the following objectives:

- Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development.

- Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth.
- Create nation-wide multidisciplinary and multisectoral research partnerships that integrate the research and development priorities of all participants
- Accelerate the exchange of research results within the network and the use of this knowledge within Canada to harness it for Canadian economic and social development.

The annual budget of the NCE program is \$82.4 million and nineteen networks are currently funded. At present, the broad categories of endeavour are: health, human development and biotechnology; advanced technologies; natural resources and environment; and engineering and manufacturing.

To obtain a list of the current networks, consult the document Networks of Centres of Excellence Program – Supplement at: www.cbcs.org/servlet/ContentServer?pagename=CBSC_FE%2Fdisplay&lang=en&cid=1081944220414&c=Supplements

ELIGIBILITY

In general, NCE competitions are open to all research areas. The NCE Steering Committee will decide on the need to target areas for new networks prior to each competition, taking into consideration the:

- Amount of funding available
- Broad areas already represented in the ongoing networks
- Need to promote or develop specific areas in accordance with national needs.

Organizations eligible to receive funds are universities, affiliated hospitals and research institutes, and post-secondary institutions having a research mandate. Researchers and organizations that receive NCE funds must meet the general eligibility requirements of one of the three federal granting agencies partnering in the program. An industry consortium may receive funds to administer a network.

The application and program guidelines are also available online.

For more information:

Networks of Centres of Excellence Program Directorate
Industry Canada
350 Albert Street, Ottawa, ON K1A 1H5
T (613) 995-6010 F (613) 992-7356 E info@nce.gc.ca
www.nce.gc.ca



NRC EXPERTISE—NATIONAL RESEARCH COUNCIL CANADA

DESCRIPTION

NRC Expertise provides a direct link to over 1,700 National Research Council of Canada researchers who have scientific, technical and professional expertise in thousands of topics. The database is a bilingual tool that tracks research expertise and contacts across NRC. Each bilingual record describes an individual's expertise and provides his or her title, telephone number, e-mail, institute, group and a hot link to their institute home page.

NRC Expertise offers access to experts in specific areas, such as:

- Aerospace
- Astronomy
- Biotechnology
- Construction
- Information and telecommunications
- Manufacturing
- Marine dynamics
- National measurement standards
- Transformational science.

NRC Expertise enables companies to identify sources of expertise, potential R&D collaborators and partners. With 23 institutes, programs and technology centres, as well as a network of more than 250 Industrial Research Assistance Program offices, the NRC has the capacity to help partners and collaborators gain access to universities, research institutes and industry leaders across the country.

The NRC Expertise Database comes with optimized searching capabilities, including:

- Browsing by subject, name, institute, city, province and language
- Enhanced basic search, which sorts results by institute, relevance or last name
- An advanced search option, allowing users to search specific fields (e.g., name, Institute, city, province and language preference)
- A display option, enabling users to view only English or French records, both English and French records, or a full or condensed version of a record.

For more information:

NRC Expertise Database
Canada Institute for Science and Technical Information
National Research Council Canada
Montreal Road, Building M-55, Ottawa, ON K1A 0R6
T (613) 993-7811 F (613) 952-8245 E expertise.cisti@nrc-cnrc.gc.ca

Alison Ball
Communications Contact
Canada Institute for Science and Technical Information
National Research Council Canada
1200 Montreal Road, Building M-55, Ottawa, ON K1A 0R6
T (613) 993-9195 F (613) 952-8239 E alison.ball@nrc-cnrc.gc.ca
www.expert.nrc-cnrc.gc.ca/home_e.html



NATIONAL RESEARCH COUNCIL—INDUSTRIAL RESEARCH ASSISTANCE PROGRAM (IRAP)

ELIGIBILITY CRITERIA

Canadian small and medium-sized enterprises (SME's) with under 500 employees and industrial associations desiring to enhance their technological capability.

TECHNOLOGY EXPERTISE AND ADVISORY SERVICES

NRC-IRAP Industrial Technology Advisors (ITAs) help to identify and address the technical and research needs of SMEs, as well as their sustainable development issues, at each stage of the R&D development process and innovation cycle.

IRAP's network of 235 ITAs work in 150 locations across the country. These ITAs are scientists and engineers chosen for their business experience and expertise in specific technology sectors. Each ITA is a knowledgeable guide who works in-person and on-site to lead you to the resources best suited to your situation. Chosen for their skills in technology and science as well as their experience in business, ITAs provide customized solutions to clients. Your ITA will help you set priorities and establish the most direct route to achieving your goal.

FINANCIAL ASSISTANCE FOR R&D ACTIVITIES

Research and Technology Development Activities

NRC-IRAP provides non-repayable contributions to Canadian SMEs interested in growing by using technology to commercialize services, products and processes in Canadian and international markets. NRC-IRAP also provides mentoring support and invests on a cost-shared basis for research and pre-competitive development technical projects, upon assessment of a project and firm by a team of Industrial Technology Advisors. NRC-IRAP's partner organizations also receive contributions to provide technical and research assistance to Canadian SMEs.

Youth Employment Strategy Programs

IRAP's Internship Program with Innovative Small and Medium-sized Enterprises and Collaborative Research Internships Program provide firms with support to hire post-secondary graduates. Both firms and graduates benefit from these programs: firms benefit from graduates expertise in a diverse variety of disciplines and graduates gain valuable work experience that will help open the doors for future employment. NRC-IRAP delivers this youth initiative on behalf of the Government of Canada's Youth Employment Strategy (YES) Program with funds from the Department of Human Resources and Skills Development (HRSD).

NETWORKS

The NRC-IRAP Network plays a critical role in bringing together the key players in the Canadian innovation system for the benefit of SMEs. This extensive network links entrepreneurs, research and development (R&D) institutions, technology brokers and technology transfer centres to those with knowledge and information about local sources of financing.

National Research Council Canada *National Research Council Canada* - NRC-IRAP works closely with NRC's 19 research institutes and four technology innovation centers.

Technology Visits Program (TVP) and Innovation Insights (ii)

TVP and ii facilitate the exchange of best practices among managers who have successfully introduced innovation and new technologies into their operations. TVP and ii programs are delivered by the Canadian Manufacturers & Exporters (CME) with IRAP support.

Science and Technology Organizations NRC-IRAP is the SME portal to a network of almost 140 of Canada's leading public and private research and technology-based organizations. Contact an Industrial Technology Advisor (ITA) to discuss why/how these organizations can help you.

Federal Partners in Technology Transfer (FPTT) FPTT brings together 16 federal government departments and agencies to foster the development of the federal government's technology and knowledge transfer and commercialization processes. FPTT provides opportunities to ITAs and to their industry clients to develop their technology and knowledge transfer capabilities.

International Activities The reach of the IRAP network extends past Canada's borders, with international connections forged by technology trade missions, linkages with Technology Development Officers and numerous visits and collaborations.

Although currently modest in scope, IRAP's international activities seek to create and facilitate technology opportunities for SMEs. Through its office for Strategic Alliances and the efforts of 14 regional ITAs, IRAP facilitates program linkages between its clients and a variety of S&T organizations, primarily in Europe and South East Asia. IRAP regions work with SMEs to expand opportunities for technology exchange and the establishment of joint ventures with foreign enterprises.

For more information: To reach IRAP or an Industrial Technology Advisor (ITA), please contact the IRAP regional office below or call toll-free: 1-877-994-4727

Industrial Research Assistance Program
200 Town Centre Court, Suite 1101
Scarborough, ON M1P 4X8
T (416) 973-4484 F (416) 973-4303
www.irap-pari.nrc-cnrc.gc.ca/howirapcanhelpyou_e.html



**NRC INDUSTRY PARTNERSHIP FACILITIES,
NATIONAL RESEARCH COUNCIL CANADA**

OBJECTIVE

Industry Partnership Facilities (IPFs) are incubators/accelerators established to foster and assist new ventures using NRC technologies or expertise, thereby providing economic gain to Canada. IPFs provide facilities, services and professional expertise that promote the establishment of a successful venture.

DESCRIPTION

NRC IPFs offer companies the chance to co-locate at world-class NRC research space located across the country. These facilities offer unique services to innovative technology-driven companies.

IPF residents have access in one place to outstanding research facilities, research expertise and services offered by the NRC Industrial Research Assistance Program and the NRC Canada Institute for Scientific Information. Locating at an NRC facility also provides access to important networking opportunities at both the international and national level.

ELIGIBILITY

Applicants must be small- to medium-size businesses with a novel product or process, preferably based on NRC technologies. The applicant may be either exploring a venture with plans to develop a new business or looking at expanding an existing enterprise into a new area. Consulting, wholesale or retail businesses will not be considered for admission. Selection will be based on a match between the candidate's business and the entry criteria.

For more information:

Mr. Jean-Jacques Ledoux
Manager, Industry Partnership Facility
National Research Council Canada
Building M-50, Montreal Road, Ottawa, ON K1A 0R6
T (613) 998-6755 F (613) 993-8054
E Jean-Jacques.Ledoux@nrc-cnrc.gc.ca
www.nrc-cnrc.gc.ca/doingbusiness/colocating_e.html



NSERC COLLABORATIVE RESEARCH AND DEVELOPMENT PROGRAM

OBJECTIVE

The Collaborative Research and Development (CRD) grants program is intended to give companies that operate from a Canadian base access to the unique knowledge, expertise and educational resources available at Canadian post-secondary institutions and to train students in essential technical skills required by industry. The mutually beneficial collaborations are expected to result in industrial and/or economic benefits to Canada.

DESCRIPTION

CRD Grants support well-defined projects undertaken by university researchers and their private-sector partners. Direct project costs are shared by the industrial partner(s) and NSERC. Projects may range from one year to five years in duration, but most awards are for two or three years.

The industry partner must contribute to the direct project costs in an amount equal to, or greater than, the amount requested from NSERC. The industrial cash must be at least half of the NSERC request, with the balance provided as in-kind contributions to the project by the industrial partner(s). NSERC will recognize only those in-kind contributions that are considered essential to carry out the work. In some cases, the following factors may be considered in determining an appropriate cost-sharing ratio:

- The size of the company
- Its R&D budget
- The risk inherent in the research
- The access to a company's specialized knowledge or facilities
- The stage of technological development
- The extent and immediacy of the expected return
- The amount of previous support for the proposed work.

NSERC's Policy on Intellectual Property supports the premise that every effort should be made to exploit the results of NSERC-funded research in Canada, for the benefit of Canadians.

Project eligibility

CRD projects can be at any point in the R&D spectrum that is consistent with the university's research, training and technology transfer mandate. Eligible collaborations include focused projects with specific short- to medium-term objectives, as well as discrete phases in a program of longer-range research. All proposals require evidence of detailed planning and sound budget justification, and must clearly spell out the underlying assumptions, intended approaches, milestones and deliverables.

Projects that focus on the routine application of existing technology, provide routine analysis, collect data without interpreting underlying mechanisms or provide professional practice or consulting services (contract research) are not eligible. Similarly, proposals that involve the set-up and operational management of an institute, a formal or informal group of researchers or that are principally associated with the acquisition and maintenance of scientific equipment will not be considered.

Industry participation

The Partner Eligibility Guidelines section (www.nserc-crsng.gc.ca/peg) of the Guidelines for Organizations Participating in Research Partnerships Programs should be consulted to determine the eligibility of the industrial partner to participate.

However, in general, an industrial partner is defined as a Canadian-based business which derives the majority of its revenues from the sale of products and services and not from government aid. Such partners must be willing and able to exploit the research results for the economic benefit of Canada.

Multinationals may be eligible if they have commercial activities which take place in Canada, such as R&D or manufacturing related to the proposed research, and if the funded activity will result in significant economic benefit to Canada.

Foreign firms may be eligible as a partner, provided an eligible Canadian-based industrial partner plays a major role in the project and will exploit the research results for the economic benefit of Canada.

An industrial partnership can consist of a single firm, an industrial association or producer group, a formal or informal consortium, or a grouping of these. In the case of consortia, financial support to the project derived from industrial sources can be leveraged and there must be active involvement in the research project from one or more member companies or the consortium itself, if it can demonstrate the capacity to guide the project and disseminate the results for its member companies.

Public utilities are also eligible.

Start-up companies (companies in the R&D phase) that have sound business plans and secure financial backing may be accepted as industrial partners. However, they must demonstrate that they have, or have the potential to acquire, the capability to exploit the research results.

Application process

Proposals can be submitted at any time. Full instructions for professors and their industrial sponsor(s) to complete the forms and the on-line submission are found on NSERC's On-line Services page at: www.nserc-crsng.gc.ca/forms/formtable_e.htm

All proposals undergo peer review. Large or complex proposals (requesting \$200,000 or more per year) are reviewed by a site visit committee. Those requesting \$150,000 or more per year from NSERC are reviewed by a selection committee – the Advisory Committee on University-Industry Grants (ACUIG). The ACUIG normally meets four times a year: in March, June, September, and December.

Decisions on funding CRD Grants are usually made within three to five months of receiving a complete application.

For more information:

T (613) 995-1111 E rpp@nserc.ca
www.nserc-crsng.gc.ca/professors_e.asp?nav=profnav&lbi=b3



NSERC INDUSTRIAL R&D FELLOWSHIPS PROGRAM

OBJECTIVE

The objective of this fellowship is to:

- Encourage excellent recent PhD graduates in science and engineering to gain experience and seek careers in Canadian industry
- Promote awareness in Canadian industry of the capabilities of Canadian universities and university research
- Facilitate the transfer of expertise and technology
- Provide an opportunity for PhD holders seeking university careers to gain experience in industrial research and development.

DESCRIPTION

Industrial R&D fellowships provide financial support for two years to promising recent doctoral graduates engaged in industrial research and development. NSERC contributes \$30,000 per year toward the fellow's salary for two years. This is supplemented by a company contribution of at least \$10,000 per year.

Company eligibility

To participate in the Industrial R&D Fellowships (IRDF) program, companies must be deemed eligible by NSERC. To be eligible, a company must:

- Be federally or provincially incorporated in Canada (companies that have not been incorporated may be considered if they are wholly Canadian-owned)
- Operate on a for-profit basis
- Possess adequate and sound financial resources
- Be engaged in R&D activities based, to a significant extent, on technology derived from the natural sciences or engineering (excluding clinical and health research)
- Maintain appropriate research facilities (e.g., laboratories, computing equipment) on the company premises
- Demonstrate that it can apply the results of its research by completing subsequent development work in Canada and by marketing or exploiting the products or processes from a Canadian base in the best interests of the company and the Canadian economy.

Also eligible are organizations that represent a group of Canadian enterprises or producers (such as agricultural or fishing cooperatives, or trade associations), consulting firms, engineering firms, and other enterprises that do not have production facilities. These types of organizations must demonstrate their ability to fund and apply the research through a Canadian company or association.

Finding qualified researcher candidates

Industrial R&D Fellowships are intended primarily for recent doctoral graduates seeking employment in Canadian industry for the first time. To be nominated for a fellowship, researchers must:

- Be a Canadian citizen or permanent resident of Canada at the time of nomination

- Hold a doctoral degree in a discipline of science or engineering that NSERC supports or expect to have completed all the requirements for such a degree, including your defence, by the proposed date of appointment.

Candidates must have completed their doctoral degree within the last five years. Awards to candidates who completed their doctoral degree more than five years, but no more than seven years, prior to the competition will be made only in exceptional circumstances and will have to be justified by the nominating company. For researchers who have withdrawn from the workforce and active research for at least one year after receiving their doctorate for maternity leave or to raise a child, NSERC will extend this period to nine years.

To help companies find a qualified candidate quickly, NSERC has established an **inventory of pre-approved IRDF candidates** in the following fields:

- Cellular and molecular biology
- Chemistry
- Earth science and ecology
- Electrical engineering and computing science
- Engineering
- Life sciences and psychology
- Mathematical sciences
- Physics and astronomy

For approved candidates, see: www.nserc-crsng.gc.ca/programs/IRF_inventory_e.htm. Candidates nominated from this inventory are automatically eligible for an IRDF, but projects must still be evaluated and approved.

Applications

Companies must apply to become eligible to participate in the IRDF program. To apply, companies must complete and submit Form 183B, Application for Eligibility of Organizations to Participate in NSERC's IRDF and Industrial USRA Programs, at any time during the year or with the nomination for a fellowship. Forms are available at: www.nserc-crsng.gc.ca/forms/formtable_e.htm

For more information:

Industrial R&D Fellowships	IRDF Company Eligibility
T (613) 996-1900	T (613) 992-2246

Or please go to: www.nserc-crsng.gc.ca/sf_e.asp?nav=sfnv&lbi=3c



NSERC INDUSTRIAL RESEARCH CHAIRS

OBJECTIVE

Industrial Research Chairs (IRC) are intended to:

- assist universities in building on existing strengths to achieve the critical mass required for a major research endeavour in science and engineering of interest to industry

and/or

- assist in the development of research efforts in fields that have not yet been developed in Canadian universities but for which there is an important industrial need.

DESCRIPTION

NSERC offers three types of Industrial Research Chairs:

- **Senior Industrial Research Chairs** for distinguished senior researchers (five-year appointment, renewable)
- **Associate Industrial Research Chairs** for early stage researchers demonstrating exceptional promise (five-year appointment, renewable once)
- **Executive Industrial Research Chairs** for outstanding R&D professionals (five-year appointment, non-renewable).

An IRC grant provides funding for the salary of the Chairholder, infrastructure, research tools and instruments and general expenses related to the Chair's program of research.

Chairholders are expected to focus their activities on conducting research and training highly qualified personnel, while carrying a reduced administrative and teaching load.

IRCs are funded jointly by NSERC and industry. The industrial supporting organizations will normally contribute at least half the cost, in cash, with NSERC contributing the remainder. In exceptional cases, NSERC may assume a somewhat larger share of the direct costs of research when a company makes a significant in-kind contribution in addition to the cash support. This contribution, in the form of goods or services, must represent an incremental expense that the industrial supporting organization would not incur outside of the Chair program. Furthermore, these contributions of goods and services would have to be purchased with program funds if not donated.

ELIGIBILITY

The IRC proposal must be in an area of high priority for both the university and the industrial supporting organization. Similarly, the industrial supporting organization must demonstrate a strong commitment to a field of research relevant to industrial activity that is important to the Canadian economy.

The minimum university commitment to the establishment of an IRC includes tenured (Senior Industrial Research Chair), tenure-track (Associate Industrial Research Chair), or five-year non-tenured term (Executive Industrial Research Chair) appointments and adequate laboratory and office space for the research group. A university financial contribution to the cost of the research program or infrastructure will strengthen the case for support.

INDUSTRY SUPPORT

In addition to contributing one half the direct costs of a Chair, the industrial supporting organization(s) must demonstrate willingness and ability to collaborate with the Chair and to exploit the research results in Canada.

Industrial cash contributed toward an IRC is eligible regardless of when it was actually provided, as long as the money has not been spent prior to the application being submitted to NSERC. If the supporting organizations choose to contribute to an endowment as a means of supporting the Chair, the recognized contribution will be limited to the amount attributed to industrial sources that are directly allocated to the cost of the Chair over the term of the award.

The Canada Revenue Agency will recognize cash contributions to NSERC Industrial Research Chairs as Scientific Research and Experimental Development (SR&ED) expenditures under the Income Tax Act.

For more information:

www.nserc-crsng.gc.ca/professors_e.asp?nav=profnav&lbi=c1



OBJECTIVE

The OCE Research Program is focused on meeting the competitive needs of Ontario industry by tapping into the remarkable potential for Ontario colleges, universities and research hospitals to act as generators of innovation. It consists of four targeted initiatives:

1 INTERACT

DESCRIPTION

The Interact initiative is designed to initiate new industry-academic interactions that create collaborative research partnerships between industry and Ontario universities, colleges or research hospitals. Interact projects may be initiated quickly, should be completed within six months and involve OCE investments up to \$13,500.

ELIGIBILITY

Successful Interact proposals will have the following elements:

- Address specific industry challenges
- Demonstrated potential to develop a lasting relationship between the company, the academic institution and OCE
- Intellectual Property arising from the project is to be managed in accordance with the University/College/Hospital Collaboration Agreement
- Demonstrated talent development and training opportunities for students
- Industry partner(s) make a cash and/or in-kind contribution to the project that matches that of OCE. The amount of that contribution and the ratio of cash to in-kind will depend on the participating firms and the project objectives
- Demonstrated potential benefit to industry and academic partners as well as the Ontario economy.

Applicants should contact an OCE representative to discuss their proposal and obtain the relevant forms.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector (please consult OCE website for list of contacts: www.oce-ontario.org/pages/contact/contact.php).

Alternatively, please contact:

Ross Bradsen

T (866) 759-6014 x 3240 E ross.bradsen@oce-ontario.org

2 PROOF OF CONCEPT

DESCRIPTION

The Proof of Concept initiative supports feasibility studies that test an idea to mitigate the risk of further research investments. They are short-term and narrowly focused projects, typically 3 – 12 months in duration. These projects are collaborative in nature, involving industry partner(s) and Ontario universities, colleges or research hospitals. OCE's investment is determined by the support and commitment from the partners but is generally less than \$25,000.

ELIGIBILITY

Successful Proof of Concept proposals will have the following elements:

- The goal of the initiative should be to assess and reduce the risk of a more comprehensive research and development investment
- May include more fundamental (enabling) research
- Intellectual Property arising from the project is to be managed through the University/College/Hospital and Research Collaboration Agreements entered into with OCE
- Talent development and training opportunities for students are expected within the project
- Industry partner(s) make a cash and/or in-kind contribution to the project that matches or exceeds that of OCE. The ratio of cash to in-kind will depend on the participating firms and the project objectives
- Demonstrated potential benefit to the Ontario economy.

Applicants should contact an OCE representative to discuss their proposal and obtain the relevant forms. Proposals are subject to external peer review.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please consult OCE website for list of contacts: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

Michael Fagan

T (866) 759-6014 x 2451

E Michael.Fagan@oce-ontario.org

3 CHAMPIONS OF INNOVATION

DESCRIPTION

The Champions of Innovation initiative supports research and development of disruptive technologies that have the potential to create new markets and to provide the basis for new start-up companies. OCE investments are made on a 12-month renewable term, typically for up to two years, based on the financial return expected from the research outcomes. Annual investments in a Champions of Innovation project average \$50,000.

ELIGIBILITY

Successful Champion of Innovation proposals will have the following elements:

- A compelling business case for potential research outcomes
- Demonstrated interest by groups representing the industry that the technology will impact (e.g. sector associations, NGO) through an in-kind contribution
- Intellectual Property arising from the project will be managed in accordance with the University/College/Hospital and Research Collaboration Agreements entered into with OCE
- Demonstrated talent development and training opportunities for students
- Potential to create a new market (therefore industry partnerships are not required)
- Demonstrated potential benefit to the Ontario economy.

Applicants should contact an OCE representative to discuss their proposal and obtain the relevant forms. Proposals are subject to external peer review.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please consult OCE website for list of contacts: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

Hindal Mirza

T (866) 759-6014 x 4280

E Hindal.Mirza@oce-ontario.org

4 COLLABORATIVE RESEARCH

DESCRIPTION

The Collaborative Research initiative is designed to promote and harness innovative research partnerships between industry and Ontario universities, colleges or research hospitals. OCE's investment is determined by the support and commitment from the partners up to \$200,000 per year with a maximum duration of three years. Typically, collaborative projects involve an annual OCE investment of \$50,000 per year.

ELIGIBILITY

Successful proposals will have the following elements:

- Projects must include both private-sector and academic partners. Public-sector partners may also participate
- A critical component of the initiative will be talent development and training opportunities for students, post-doctoral fellows and other highly qualified personnel within the project

- Intellectual Property arising from the project will be managed in accordance with the University/College/Hospital and Research Collaboration Agreements entered into with OCE
- Industry partner(s) make a cash and in-kind contribution to the project that matches or exceeds that of OCE. The ratio of cash to in-kind will depend on the participating firms and the project objectives
- Demonstrated potential benefit to the Ontario economy.

Applicants should contact an OCE representative to discuss their proposal and obtain the relevant forms. Proposals are subject to external peer review.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please consult OCE website for list of contacts: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

Don Wilford

T (866) 759-6014 x 1021

E Don.Wilford@oce-ontario.org



OBJECTIVE

The OCE Talent Program aims to produce next-generation innovators and entrepreneurs. It consists of initiatives that support innovators at various stages of their development:

1 CONNECTIONS INITIATIVE

The **Connections initiative** supports collaborations between final year undergraduates (preferably in teams) and industry partners. These partnerships address a technology problem defined by the participating company and provide lasting benefits to all involved. Student participants get an opportunity to apply technical skills to real-world problems, helping them develop as innovators. Partnering companies can find – and potentially hire – young talent. OCE invests up to \$3,500 in individual university/college Connections projects.

ELIGIBILITY

Successful Connections proposals contain the following elements:

- Industry partner makes a cash contribution that matches or exceeds that of OCE.
- Projects are defined by the industrial participant with the assistance of a faculty member.
- The project relates to a relevant, industry-specific, technological problem.
- The faculty member selects and matches students to projects.
- The company dedicates a supervisor from their organization to provide oversight, support and guidance to the student(s).
- Student project leader(s) are appointed for each project to work with the company supervisor and develop objectives, schedules and budgets for the project.

Faculty at an Ontario college or university with interested students should complete an application and proposed budget. Applications are to be accompanied by an industry letter of support for the project. Typically, applications for an upcoming academic term are accepted four to six weeks prior to the start date.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please see contact list at: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

Bradley H. Fox
T (866) 759-6014 x 3243
E Bradley.Fox@oce-ontario.org

2 INTERNATIONAL SCHOLARSHIPS

DESCRIPTION

The International Scholarships initiative provides student researchers with the opportunity to work in cutting-edge facilities with leaders in their field, wherever they are located.

The initiative offers up to \$15,000 to support a student researcher's related travel and stay expenses for a period of up to four months. Travel and work can be conducted anywhere in the world – giving our next generation of innovators a truly global opportunity. Ontario Centres of Excellence (OCE) funds half the budgeted expenses before the exchange takes place. The balance is paid after the trip as part of OCE's processing of the student's expense form.

ELIGIBILITY

Successful International Scholarship proposals will contain the following elements:

- Explanation of how the student's research at the host institution is linked to an OCE-supported project
- Support of the student's academic supervisor
- Research at the host institution that will clearly benefit industrial and academic stakeholders involved in the OCE-supported project as well as the student
- The recipient plans to travel directly to the facility where they will be conducting their research and work there for the duration of the exchange
- A post-exchange report outlining the value of the Scholarship and the outcomes of the exchange.

Interested applicants (and their supervisors) should complete the application form available at: www.oce-ontario.org/pages/program/talent_scholarships.php Candidates will be considered as an appropriate opportunity arises.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please see contact list at: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

George Wright
T (866) 759-6014 x 3248
E george.wright@oce-ontario.org

3 FIRST JOB

DESCRIPTION

The First Job initiative moves talented people from academia to industry. It makes it possible for companies to improve their ability to innovate by recruiting talented young researchers with significant academic experience. These researchers bring leading-edge scientific

knowledge that helps companies increase their competitiveness and productivity. Successful applicants receive a grant of 50 per cent of the recruit's salary (up to \$40,000); start-up companies are eligible for a grant of 80 per cent of the recruit's salary (up to \$50,000).

ELIGIBILITY

- The researcher has graduated with an advanced degree (master's or PhD) within the last five years and is eligible to work in Canada
- The researcher should be currently working on, or have recently completed, an OCE-supported project led (or co-led) by their thesis supervisor
- The applying company will be able to demonstrate that hiring the researcher will enhance their competitive position.

Applicants will complete a First Job application with an OCE Business Development Officer. The application will be accompanied by a letter of support from the participating company.

For more information:

For more information on this initiative and application process, applicants should contact a member of the Business Development team working in their sector. Please see contact list at: www.oce-ontario.org/pages/contact/contact.php

Alternatively, please contact:

Marc Nantel

T (866) 759-6014 x 1025

E marc.nantel@oce-ontario.org



**ONTARIO RESEARCH
COMMERCIALIZATION PROGRAM**

OBJECTIVE

The objectives of the Ontario Research and Commercialization Program (ORCP) are to:

- Strengthen public research institution/industry linkages and collaboration and improve public research institution linkages to the local economy
- Help public research institutions advance research discoveries to market-ready inventions through Early Stage Proof of Principle Funds
- Help entrepreneurs, start-ups and industry bring new products to market.

The ORCP will help create an efficient commercialization system in Ontario that will accelerate the movement of world-class research from Ontario's labs to the marketplace and support the growth and development of Ontario's technology-based companies.

DESCRIPTION

The Ontario Research Commercialization Program (ORCP) is a \$27 million program comprising three components:

1 Accelerating the Transfer of Knowledge and Technology to the Private-Sector

- Sharing and coordinating resources and expertise across institutions
- Developing outward focused knowledge transfer strategies with industry
- Improved industry access to research infrastructure
- Entrepreneurship development
- Improved access to intellectual property, web-based portals
- Professional development of technology transfer personnel

2 Proof of Principle Funds

- To help bridge the gap between research discovery and market-ready invention

3 Building Industry Receptor Capacity

Initiatives to help entrepreneurs, start-ups and industry bring new products to market:

- Business development mentorships
- Investor-ready mentorships
- Formation of angel investor groups
- Entrepreneurial training
- Enterprise fellowships/internships
- Best practise programs to support company growth and investor readiness

Grants will be awarded for up to three years. Typical grants will be between \$100,000 and \$750,000/year, per program component, depending on the number of organizations in the group and the nature of the proposed project(s).

For the Accelerating Transfer of Knowledge and Technology component, a group is expected to match 50 per cent of the total cost of the project over the three-year period (current, existing technology transfer budgets may be used as a match). Alternatively, it may match 25 per cent of the total cost of the project over the three-year period, with new, incremental cash.

For the Proof of Principle Funds component, no matching contribution is required – and overhead costs cannot exceed 10 per cent of the total cost.

For the Building Industry Receptor Capacity component, a 50 per cent match is required. The match must be with new, incremental contributions, in cash or in kind.

ELIGIBILITY

ORCP funding is open to groups of publicly funded Ontario research institutions (colleges, universities and hospitals) and not-for-profit organizations focused on growing and supporting Ontario's technology-based industries. Applications from individual institutions or organizations are not accepted. Direct funding support to industry is not fundable under ORCP. Funding may be provided to support industry initiated activities that build industry-institutional collaboration.

For the *Accelerating Transfer of Knowledge and Technology and Proof of Principle Funds* components, the lead applicant in the group must be a university, college or research hospital. For the *Industry Receptor Capacity* component, the lead applicant must be a not-for-profit organization focused on growing Ontario's technology-based industries.

To participate in ORCP, eligible applicants must first submit an Expression of Interest (EOI). Applicants will be notified in writing as to eligibility and potential partners to pursue to ensure coordination of projects regionally and/or provincially.

Projects will be selected for funding through a competitive process. While proposals may be submitted to any and all program components, preference will be given to integrated proposals that address all three components.

For more information:

For more information on selection criteria, please see program website at: www.mri.gov.on.ca/english/programs/ORC-ProgramGuidelines.asp

For more information on ORCP or clarification of the Expression of Interest or Application Guidelines/Form, you may contact the Ministry:

T (416) 326-9641

F (416) 314-0680

E ORCP@edt.gov.on.ca

www.mri.gov.on.ca/english/programs/ORC-ProgramGuidelines.asp



PRECARN INCORPORATED-FACILITATION AND SUPPORT OF PRE-COMMERCIAL, COLLABORATIVE R&D

OBJECTIVE

Precarn Incorporated is an independent, not-for-profit company that supports the pre-commercial development of leading-edge technologies.

DESCRIPTION

Precarn works with Canadian companies who are seeking to commercialize their new ideas to get an edge in global markets. Unlike other research funding programs, Precarn uses a distinctive collaborative model that includes a developer, a customer and an academic research partner in every project.

This collaboration accelerates development, reduces risk and shares the cost of the R&D. Precarn provides access to an extensive national network of world-class researchers, innovative companies and sources of funding. Precarn receives support from Industry Canada, other federal departments and provincial government agencies, as well as private sources.

Founded in 1987, Precarn is based in Ottawa and reaches clients throughout Canada through a network of partnerships. In its 19-year history, Precarn has invested \$130 million in public funding into over 200 collaborative R&D projects in the fields of robotics, intelligent systems and intelligent information and communications technologies.

Services to Companies

In addition to project funding, companies find value in Precarn's networking and partnering services and activities. Participation in the Precarn network provides access to new partners, expertise, R&D programs and facilities nationwide, relationships with top people including the best and the brightest graduate students, and information and intelligence about what is going on across the country and around the world. Precarn also performs due diligence on the technology which may prove valuable later in raising capital.

Funding Approach

Precarn tailors its programs to the needs of Canadian companies and research organizations while maintaining flexibility in their administration. To be eligible for funding, projects must involve a technology developer, a technology user and an academic institution (university, college or technology institute). Projects must also involve the development and application of intelligent systems or intelligent information and communications technologies.

Precarn supports R&D leading to commercialization. A typical project results in a prototype demonstrated in a user setting. Precarn's funds are provided as non-repayable grants, with specific deliverables required under each project. Precarn makes no claim on foreground intellectual property emerging from projects; this is the property of the members of the project team, who must develop their own workable IP agreement before funding can be approved.

Precarn's professional staff can provide advice and assistance on project management issues when required. For projects that do not qualify for Precarn funding, staff will be pleased to suggest other potential sources of funding and provide introductions upon request.

Funding Products

Precarn operates a variety of programs that are open to project teams led by companies.

Funding under Precarn's national programs is awarded on the basis of a two-stage competitive process. Periodically, Precarn announces closing dates for concept documents (indications of intent) and full proposals. Proposals undergo modified peer review by experts in technology, R&D management, commercialization and related issues. Each project must be led by a for-profit company and must include at least one partner that will commercialize the resulting technology.

Projects supported under Precarn's "regular" national program can receive up to 40 per cent of eligible project costs, normally to a maximum of \$1 million. Projects of this scale typically run for 18 to 36 months. This program is open to viable companies of all sizes, in any industry or field of application where there is a commercial opportunity for the technology. Elapsed time from receipt of concept documents to final approval is normally about four to five months.

Precarn also operates a national program for small companies, typically in the range of five to 50 employees. The process is quicker and simpler than that of the regular program. The contribution per project is lower but the percentage contribution by Precarn is higher. The parameters are subject to minor change and are announced with each RFP.

Precarn also operates a network of joint programs with other innovation facilitators in different parts of Canada. In Ontario, the partner is OCE Inc. The program is targeted at, but not limited to, very small Ontario companies. Proposals can be submitted at any time through OCE Inc., and the approval process is streamlined. Companies may be required to contribute as little as 25 per cent of eligible project costs.

Precarn also operates other kinds of programs. Information on these is available on the Precarn website, www.precarn.ca.

For more information:

To find out how Precarn can help your company to succeed, please visit www.precarn.ca or contact:

Derek Best
Director, Research Programs
Precarn Incorporated
Toll (866) 727-9634 T (613) 727-9576 x232 E best@precarn.ca

To access Precarn's joint program with OCE Inc., please contact:

Bharat Rudra
Business Development Manager
Centre for Communications and Information Technology, OCE Inc.
T (613) 726-3420, x 4221 E bharat.rudra@oce-ontario.org



**SUSTAINABLE DEVELOPMENT
TECHNOLOGY CANADA**

OBJECTIVE

Sustainable Development Technology Canada's (SDTC) mission is to act as the primary catalyst in building a sustainable development technology infrastructure in Canada. The Foundation draws from an investment fund of \$550 million.

DESCRIPTION

SDTC finances and supports the development of clean technologies that provide solutions to issues of climate change, air quality and soil, and that deliver economic, environmental and health benefits to Canadians.

An arm's length, non-profit corporation, SDTC bridges the gap in the innovation chain between R&D and commercialization, helping clean-technology developers move their products and solutions through the development and demonstration phases in preparation for commercialization.

ELIGIBILITY

The program is open to clean-technology developers engaged in projects that focus on the development and demonstration of new technologies that address climate change and clean air issues. The projects must be undertaken primarily in Canada. Applicants should demonstrate that:

- The proposed project is technically sound and undertaken by an applicant with the necessary technical, financial and management capacity
- The proposed project will be undertaken in a collaborative and innovative manner
- The new technology and related intellectual property may be rapidly diffused throughout all relevant sectors
- The funding is necessary to ensure that the project proceeds in a manner to ensure broad benefits to Canadians nationally or regionally.

SDTC believes it is critical to build consortia that represent the full spectrum of a technology's supply chain, involving researchers, product developers, manufacturers, distributors, retailers and end customers. To be considered for SDTC funding, applicants should have expertise in sustainable development technology and be part of a project consortium that meets one of the following three descriptions:

1 A for-profit corporation, a partnership, a limited partnership or a business trust that has entered into **a contract** relating to the execution of the applicant's project with one or more of the following legal entities:

- Another corporation
- A partnership, limited partnership or business trust that has expertise in sustainable development technology
- A university, college or other provincially accredited post-secondary educational institution
- A research institute

- An individual who has expertise in sustainable development technology
 - A not-for-profit corporation, with one of its purposes being to undertake, fund or otherwise support the development or demonstration of sustainable development technology
- 2 Same as above, except a for-profit corporation, partnership, limited partnership or business trust that has entered instead into a **collaborative arrangement** with one or more of the legal entities listed above to apply jointly to SDTC for funding to carry out the applicant's proposed project
- 3 A not-for-profit corporation, with one of its purposes being to undertake or fund the development or demonstration of sustainable development technology.

A call for Statements of Interest (SOIs) invites entrepreneurs to make initial applications on-line in a simple and straightforward manner. The SOI phase is designed to provide SDTC with a good sense of proposed technologies without imposing an arduous application process. Applicants who comply with SDTC's selection criteria will be invited to submit a proposal.

SDTC holds two rounds of funding each year, in August and January respectively. Closing dates for receiving SOI applications for the latest round is **October 11, 2006**. To submit a Statement of Interest, please visit: www.sdtc.ca/en/funding/advice/soi_application.htm

To be notified of upcoming funding rounds, send an email to: fundingalert@sdtc.ca. Please provide your name, email and telephone contact information, along with some detail about the nature of your interest.

For more information:

National

Ms. Andrée Mongeon
 Director of Communications
 Sustainable Development Technology Canada
 T (613) 234-6313 x224
 E a.mongeon@sdtc.ca
www.sdtc.ca/en/funding/index.htm



Other Resources



OBJECTIVE

BioDiscovery Toronto's mission is to provide a central interface between the Toronto research community and industry, and facilitate cross-institutional activity.

DESCRIPTION

BioDiscovery Toronto is an incorporated, not-for-profit organization, facilitating the commercialization of breakthrough technologies. It provides industry with streamlined access to innovations and world-class research and expertise, and create new linkages among research, industry and capital.

Member institutions include the Centre for Addiction and Mental Health, Mount Sinai Hospital, Ryerson University, St. Michael's Hospital, Sunnybrook Health Sciences Centre, the Hospital for Sick Children, Toronto Rehabilitation Institute, the University Health Network and the University of Toronto.

BioDiscovery Toronto is part of a system of Ontario Regional Innovation Networks. These are multi-stakeholder organizations that were established by the Ontario government in 2004 to increase innovation in the province and to foster better academic-industry partnerships globally.

Located in the Toronto Discovery District at the MaRS Convergence Centre, *BioDiscovery Toronto* is within walking distance of all member institutions, helping to fulfill its goal of providing a common point-of-contact to industry and the financial community to ensure that the entire technology and knowledge transfer system is effective and timely.

For more information:

BioDiscovery Toronto
MaRS Centre
101 College Street, Toronto, ON M5G 1L7
T (416) 673-8475 E biodiscovery@101college.net



DESCRIPTION

Genome Canada is the primary funding and information resource relating to genomics and proteomics in Canada. Dedicated to developing and implementing a national strategy in genomics and proteomics research for the benefit of all Canadians, it has so far received \$600 million from the Government of Canada.

Genome Canada has established six **Genome Centres** across the country (Atlantic, Québec, Ontario, Prairies, Alberta and British Columbia) and has as a main objective to ensure that Canada becomes a world leader in genomics and proteomics research.

Together with its six Genome Centres and with other partners, Genome Canada invests and manages large-scale research projects in key selected areas such as agriculture, environment, fisheries, forestry, health and new technology development. Genome Canada also supports research projects aimed at studying and analyzing the ethical, environmental, economic, legal and social issues related to genomics research (GE3LS).

Genome Canada also funds six Science & Technology Platforms across Canada that provide the tools and expertise to analyze genomes in various ways. The platforms include services such as DNA sequencing, mapping, genotyping, micro-arrays, genetic analysis, proteomics and bioinformatics. While the primary mandate of the platforms is to provide genomic, proteomic and bio-informatic technology services for all Genome Canada-funded projects and platforms, a minimum of 20 per cent of the platform's activities are also dedicated to collaborations with non-Genome Canada funded researchers. Funded platforms are located in Victoria, Vancouver (2), Calgary, Toronto and Montreal.

For more information:

Ontario Genomics Institute

Kimberly Riley
MaRS Centre, Heritage Building
101 College Street, Suite HL50, Toronto (Ontario) CANADA M5G 1L7
T (416) 673-6587 F (416) 977-8342 E info@ontariogenomics.ca
www.ontariogenomics.ca

Genome Canada

150 Metcalfe Street, Suite 2100, Ottawa, Ontario K2P 1P1
T (613) 751-4460 F (613) 751-4474 E info@genomecanada.ca

For further information about Science and Technology Platforms, please contact Dr. Chuck Hasel, Technology Consultant to Genome Canada, at: chuckhasel@mailsnare.net.



OBJECTIVE

To produce and attract knowledge, establish commercialization infrastructure and attract a critical mass of biotechnology companies to the region in order to spur innovative research and discoveries, revitalize the region's knowledge-based economy, and support development of industry-related skills.

DESCRIPTION

The Golden Horseshoe Biosciences Network is a regional network of research organizations, companies, universities and economic developers involved in biosciences, biotechnology and related fields. A not-for-profit corporation, it is focused on ensuring a strong and thriving environment in which biosciences and biotechnology can grow through investment in the region.

The network encompasses the City of Hamilton, Halton Region and the Region of Niagara, McMaster University, its affiliated research hospitals, municipal economic development agencies from the City of Hamilton, Halton and Niagara Regions, as well as representatives from business, academia, hospitals and various levels of government.

Its mandate is to establish a strong and thriving environment for growth and investment in the region by:

- Providing educational forums and opportunities for networking and dialogue among the biosciences and the associated business community
- Facilitating the implementation of a long term growth strategy related to the business of biosciences
- Promoting awareness of the region's biosciences strengths nationally and internationally
- Raising awareness among researchers and potential scientific entrepreneurs of the economic opportunity that their research may offer
- Fostering collaborations with other organizations
- Advocating on behalf of the biosciences sector in the Golden Horseshoe.

For more information:

Darlene Homonko
Executive Director,
Golden Horseshoe Biosciences Network
McMaster University
1200 Main Street West
Michael G. DeGroot Centre for Learning & Discovery,
Room 5105, Hamilton, ON L8N 3Z5
T (905) 525-9140 x 26609 F (905) 528-3999 E homonko@mcmaster.ca

GUELPH-WATERLOO REGION PARTNERSHIP IN BIOTECHNOLOGY

DESCRIPTION

The Guelph-Waterloo Partnership in Biotechnology (GWPB) is a consortium that represents government, academic and industry stakeholders in the regions of Guelph and Waterloo Region (including the cities of Cambridge, Kitchener, Waterloo and the Townships of North Dumfries, Wellesley, Wilmont and Woolwich, together forming Canada's Technology Triangle).

Both Guelph and Waterloo Region have taken vast steps toward recognizing the importance of biotechnology as a driver of the local economy and as a critical area for growth. Initiatives to date include:

- Academic investment in biotechnology-related research and development (R&D) (University of Guelph, University of Waterloo, other)
- Biotechnology-focused strategic planning on the municipal level (Guelph)
- Establishment of the Guelph Partnership for Innovation (GPI)

- Redevelopment of employment lands (the Hanlon Creek Business Park in Guelph)
- Establishment of the University of Waterloo Research & Technology Park
- Creation of the first satellite of Toronto's Medical and Related Sciences Discovery Centre (MaRS), termed MaRS LANDING
- Expressed interest and support by Waterloo-based Canada's Technology Triangle and Communitech in helping the hundreds of the local high tech companies in bridging the gap toward life sciences
- Plans to develop incubator/accelerators (Guelph, Waterloo)
- Membership in the Ontario BioAlliance (both Guelph and Waterloo)
- A Guelph-Waterloo (G-W) region accounts for a diversity of "bio-activity" and applications. It joins the Guelph region's traditional strength in life sciences with the Waterloo region's strength in physical sciences and engineering.

For more information:

E info@gwpbiotech.com
c/o Guelph Economic Development
59 Carden Street, Guelph ON N1H 3A1

INNOVATION SYNERGY CENTRE IN MARKHAM

OBJECTIVE

The Innovation Synergy Centre in Markham (ISCM) is a not-for-profit business advisory hub created to help companies accelerate their growth and development.

DESCRIPTION

Supported by the Town of Markham, the National Research Council Canada and the Ontario Ministry of Research and Innovation, business support is offered at no cost to small- and medium-sized enterprises. Services include linking companies to highly experienced business mentors/advisors, workshops and training courses to inform companies about current business issues. ISCM also has a partnering initiative to link companies to other resources, such as universities and colleges across Ontario, for testing and IP development.

ISCM provides access to:

- Management advice and business mentoring
- Review of financial and marketing plans
- Workshops on business issues and current market trends
- Interactive business training programs
- Referrals to appropriate government programs when applicable
- Linkages to universities, colleges, government labs and international linkages for research or development collaboration.

For more information:

The Innovation Synergy Centre in Markham
1380 Rodick Road, Suite 100, Markham, Ontario L3R 4G5
General Inquiries: (905) 248-2727 Toll 1 (866) 905-4726
F (905) 479-2055 E mail@iscm.ca
www.iscm.ca/index.htm



OBJECTIVE

MaRS is a convergence innovation centre dedicated to accelerating the commercialization of new ideas and new technologies by fostering the coming together of capital, science and business.

DESCRIPTION

MaRS was created in 2000 to capitalize on the research and innovation strengths of the Province of Ontario, and to position Canada for leadership in the highly competitive global innovation economy.

Located in Toronto’s downtown “Discovery District,” MaRS sits at the epicentre of one of North America’s most concentrated clusters of biomedical research and expertise. MaRS is focused on helping Canadian innovators turn great ideas into great companies – and supporting those companies as they become global.

To accomplish this mission, MaRS is creating powerful networks that will connect the leadership of Canada’s scientific, business and investment communities to their international peers in a meaningful way. Rather than functioning as a self-contained incubator grounded in Toronto, MaRS operates as the nexus of a network of innovation partners that stretches across the city, the province, the country and the world.

MaRS programs and services are custom-designed to facilitate global commercialization of Canadian scientific discoveries and innovation, and are organized into three business units:

- **MaRS Venture Group** is a resource centre for entrepreneurs, technology start-ups and emerging growth companies. The Venture Group provides access to quality information resources, business tools and broad international networks of mentors, talent, market connections, angels, investors and other advisors
- **MaRS Collaboration Centre**, a conference and meeting space, sets a new standard for facilitation and collaboration technologies
- **MaRS Incubator** offers reasonably priced laboratory and office space for start-up and emerging companies.

In addition, **MaRS Explorer Services** provides access to research facilities and equipment to the MaRS community.

For more information:

MaRS Centre
South Tower, Suite 100
101 College Street, Toronto, ON M5G 1L7
T (416) 673-8100 F (416) 673-8181
E marsdiscoverydistrict@marsdd.com
www.marsdd.com



OBJECTIVE

The Ontario Cancer Biomarkers Network (OCBN) is a not-for-profit organization established to discover and develop cancer biomarkers for use in diagnosis, prognosis and treatment.

DESCRIPTION

OCBN supports multidisciplinary biomarker research programs involving leading scientists and state-of-the-art analytical and bioinformatics platforms.

The Network provides a wide spectrum of services to academia and industry, including:

- Biomarker discovery
- Development and validation
- Proteomic and genomic analytical services
- Consulting in drug development.

For more information:

Kenneth R. Evans
MaRS Incubator
MaRS Centre - South Tower
101 College Street, Suite 200, Toronto ON M5G 1L7
T (416) 673-6694 E kevnas@ocbn.ca
www.ocbn.ca



OBJECTIVE

The Ontario Institute for Cancer Research (OICR) was established in December 2005 to strengthen Ontario’s cancer research environment.

DESCRIPTION

The OICR is an independent, not-for-profit corporation funded by the Government of Ontario through the Ministry of Research and Innovation.

The Institute will ultimately support more than 50 internationally recognized principal investigators, with expertise in prevention, early detection, diagnosis, treatment and control of cancer. A strong core of scientists will be located at the MaRS Centre with the remainder in nodes of excellence around the province. These will be brought together in multi-disciplinary, multi-institutional collaborations that will allow complex questions to be pursued. The Institute will focus on translating its research findings into programs, technologies and therapies.

The Institute will leverage the current research excellence at universities, research hospitals and health research institutes across Ontario, leading to greater integration of cancer research efforts across institutions.

In addition to investigating fundamental aspects of cancer, the Institute will focus on translating research findings into programs, technologies and therapies. It will foster commercialization and private-sector partnerships.

The Ontario Cancer Research Network, established in 2002, has been incorporated into the Institute. Its initiatives will continue under the umbrella of the Institute and will include:

- Cancer Research Fund
- Clinical Trials Infrastructure Fund
- Clinical Trials Network
- OntarioCancerTrials.ca
- Ontario Cancer Research Ethics Board
- Ontario Tumour Bank

For more information:

Ontario Cancer Research Network
MaRS Centre, South Tower
101 College Street, Suite 500, Toronto, Ontario M5G 1L7
E info@oicr.on.ca
www.ocrn.on.ca



OBJECTIVE

The mandate of the Ottawa Life Sciences Council is to support the individuals, companies and organizations that operate in the life sciences sector by facilitating access to resources, providing up-to-date information and bringing people together to enhance networks, identify opportunities and build partnerships.

DESCRIPTION

The OLSC is a Regional Innovation Network. With a small secretariat, it is primarily a volunteer organization whose members are actively involved in specific projects and in putting in place appropriate strategies to ensure that the region maintains a competitive edge in a fast-changing environment. The OLSC website is designed to enable interested parties to become better acquainted with the existing life sciences infrastructure, and to provide relevant information about initiatives by companies, educational institutions and R&D organizations.

Membership provides a unique opportunity for companies and individuals to participate meaningfully in the development of the life sciences industry in the Ottawa region. Sponsorship and membership fees, together with volunteer efforts, support the Council's and the community's initiatives to:

- Facilitate and promote investment in companies and technologies
- Transfer technologies to the private-sector

- Expand new and existing companies through investment, business development, strategic partnering, and national and international marketing.

All members of the Council receive:

- E-mail notification of all new OLSC events and initiatives
- *BioNews*, the OLSC's newsletter
- A discounted members' rate for all OLSC events and conferences
- Opportunities to network with Ottawa's life sciences community
- Front-of-the-line opportunities to participate as attendees or presenters at the OLSC's conferences and workshops.

For more information:

Ottawa Life Sciences Council
2625 Queensview Drive, Suite 200, Ottawa , ON K2B 8K2
T (613) 828-6274 F (613) 726-3440 E info@olsc.ca
www.olsc.ca



OBJECTIVE

The Peterborough DNA Cluster is an exciting regional economic development initiative focused on commercializing regional DNA and related life sciences innovation, built on strategic alliances between private- and public-sector participants.

DESCRIPTION

The DNA Cluster is founded on a multi-party collaboration between Trent University, the Greater Peterborough Area Economic Development Corporation, Sir Sandford Fleming College, the Ontario Ministry of Natural Resources and private-sector representatives. It is incorporated as a not-for-profit corporation entity with a Board of Directors that has strong leadership and governance experience. The Cluster enjoys widespread citizen support throughout the greater Peterborough region.

The DNA Cluster is in advanced stages of its initial development and is actively working with the Ontario and Federal governments, local governments and potential private-sector partners to move forward to the next phases in its growth focused on commercialization development. The DNA Cluster organization is a consortia member of the Regional Innovation Networks program of the Ontario government Ministry of Research and Innovation.

The goals for the Peterborough DNA Cluster are to:

- Attract new businesses
- Attract new institutes
- Create, build and expand businesses
- Expand research and development at Trent University and commercialize IP

- Expand research and development at Fleming College and commercialize IP
- Build a sustainable organization to promote the commercialization of regional innovation.

The DNA Cluster is a major initiative aimed at facilitating economic growth and global competitiveness in the Greater Peterborough region. This initiative will attract and expand knowledge-based job creation, investment and company creation in the DNA and life sciences-related sector. The DNA Cluster will create the appropriate conditions for the commercialization of technologies. This will include the commercialization of technologies in DNA profiling, bioinformatics, the environmental sciences, forensics, natural resources management and related life sciences.

For more information:

Denis A. Ferkany
 President, Peterborough DNA Cluster
 Trent University, Symons Campus
 1600 West Bank Drive, Peterborough, ON K9J 7B8
 T (705) 748-1011 x 7006 F (705) 748-1147
 E dferkany@dnacluster.com
 www.dnapeterborough.ca



OBJECTIVE

The mission of the Southwestern Ontario Bioproducts Innovation Network is to strengthen the economy of Southwestern Ontario by cultivating new bioproducts, fostering energy conservation and expanding alternative energy sources. SOBIN envisions progressive companies leading the world in growing all facets of the bioproducts industry in Southwestern Ontario, leading to a vibrant regional economy.

DESCRIPTION

SOBIN is a not-for-profit organization dedicated to advancing new bioproducts and finding new uses for bio-based feedstock in manufacturing, primarily in the automotive, chemical and energy industries.

SOBIN is all about connectivity, supporting collaborative activities to accelerate innovation and commercialization. SOBIN was formed through the collaborative efforts of Acrolab, the University of Windsor, St. Clair College, Ridgeway College, the University of Guelph, Lambton College and the economic development units of Sarnia-Lambton and the Municipalities of Chatham-Kent and Windsor- Essex, with the support of the Ontario Ministry of Research and Innovation. As it moves forward, other important collaborations will include:

- Working with the Ontario Chemistry Value Chain Initiative to help make Ontario a global leader in innovative, environmentally sustainable chemical products, technologies and processes
- Working with educational and industrial partners to promote the inclusion of biofibre and biochemicals as replacements for petroleum based feedstock in automotive manufacturing
- Working with other Regional Innovation Networks focused on bioproducts, such as the Eastern Lake Ontario Regional Innovation Network (ELORIN), to develop the emerging Ontario biofibres industry.

For more information:

Matthew McLean
 Executive Director, SOBIN
 T (519) 354-9714 x 3905 F (519) 354-3436 E mmclean@sobin.ca



OBJECTIVE

The Toronto Region Research Alliance (TRRA) is a results-oriented, non-profit organization dedicated to making the Toronto region a world-leading centre for research and research-intensive industry. Its aim is to help mobilize the region to exploit its extraordinary strengths and to compete more effectively in the international R&D marketplace.

TRRA works with regional partners to:

- Attract new research-intensive companies and expand those already here
- Build public and private research capacity
- Enhance the commercialization of research
- Strengthen public awareness of the importance of research and innovation to the future prosperity of the region and Canada.

Its activities are focused in three priority sectors where the region possesses impressive competitive advantages:

- Bio life sciences
- Information and communication technology
- Advanced manufacturing and materials science.

DESCRIPTION

A neutral convener, catalyst and advocate on issues and opportunities related to our R&D mission, TRRA helps forge a regional consensus on strategic priorities. TRRA delivers informed analysis, promotes cross-sectoral dialogue and facilitates coordinated action.

TRRA offers:

- Customized, proactive support to international research-intensive organizations who are interested in investing in the Toronto region

- Public policy and advocacy support to our regional partners
- In-depth insight and analysis on research and innovation issues.

For more information:

Ross McGregor
 President and CEO
 Toronto Region Research Alliance
 101 College Street, MaRS Centre, Heritage Building, Suite HL30
 Toronto ON M5G 1L7
 T (416) 673-6674 E info@trra.ca
 www.trra.ca



OBJECTIVE

The mission of YORKbiotech is to act as a catalyst, harnessing the wealth of intellectual and technical resources to promote economic success and growth of the biotechnology and related industries as a key component of regional economic development.

DESCRIPTION

YORKbiotech is a Regional Innovation Network for biotechnology and related industries at the centre of the Greater Toronto Area. YORKbiotech is a not-for-profit community development corporation and is open to members from the private and public-sectors in the following categories:

- Companies of all sizes in biotechnology and related industries
- Service and infrastructure providers for the industry (legal, financial, regulatory, training, infrastructure, etc.)
- Industry associations

- Research and educational institutions
- Municipalities
- Hospitals
- Provincial government organizations
- Federal government organizations

By synergising the strengths of its members, YORKbiotech will help to accelerate commercialization and enhance economic outcomes. By harnessing the power of convergence amongst biotechnology, pharmaceuticals, vaccines, medical diagnostics, devices and assistive technologies, nanotechnology, advanced materials and information and communications technologies, YORKbiotech will facilitate the creation of new intellectual property, technologies, products, services and spin-off companies. It will also strengthen the region's small- and medium-sized enterprises (SMEs) and multi-national enterprises (MNEs) by linking them with regional assets.

For more information:

Robert Foldes
 Executive Director
 YORKbiotech
 4700 Keele Street, 190 Albany Road, Suite 101
 Toronto ON M3J 1P3
 T (416) 650-8058 E robert@yorkbiotech.ca
 www.yorkbiotech.ca

ENDNOTES

- 1 HM Treasury. *Lambert Review of Business-University Collaboration*. London (2003). p.3
- 2 Conference Board of Canada. *7th Annual Innovation Report: Lessons in Public-Private Research Collaboration – Improving Interactions Between Individuals*. Ottawa (2006). p.1
- 3 HM Treasury (2003). p. 24
- 4 Summarized from Conference Board (2006) p.7-11
- 5 Conference Board of Canada (2006) p.14
- 6 Ibid.
- 7 Ibid, p.13.
- 8 Ibid.
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- 10 Ibid.
- 11 Ibid.
- 12 Adapted from HM Treasury. *Lambert Review of Business-University Collaboration*. London (2003). p.34-38
- 13 HM Treasury. *Lambert Review of Business-University Collaboration*. London (2003). p.5
- 14 Ibid.
- 15 Summarized from Conference Board of Canada (2006) p.16-17.
- 16 Ibid, p.16
- 17 Ibid, p. 17, 21, 22.
- 18 Ibid, p.17.
- 19 Ibid, p.16.
- 20 Ibid
- 21 Ibid, p.17.
- 22 Ibid
- 23 Ibid, p.22.
- 24 Ibid, p.23.

Engaging Innovation.

For more information about the Toronto Region Research Alliance
please visit trra.ca or call **416.673.6670**



TORONTO REGION RESEARCH ALLIANCE

MaRS Centre, Heritage Building
101 College Street, Suite HL30
Toronto, ON M5G 1L7
Tel/416 673-6670 Fax/416 673-6671