NCE | Networks of Centres of **Excellence** of Canada

ANNUAL REPORT
2010/2011

Government of Canada
Networks of Centres of Excellence

Gouvernement du Canada
Réseaux de centres d'excellence

Canada

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CHAIR'S MESSAGE

WORKING WITH OUR PARTNERS TO BRING SOLUTIONS TO CANADIANS

It is no secret that Canada is among the world's best when it comes to scientific excellence. Through the Networks of Centres of Excellence (NCE) programs, we are making even greater strides in putting that research into practice for the benefit of all Canadians.

Over the past year, the NCE Networks and Centres have increased their focus on building a solutions-based economy in partnership with industry, hospitals, provincial governments, communities and many others. The effectiveness of our four programs is reflected in the growing number of organizations that are partnering with the NCE. A total of 3,163 partners, including more than 1,450 from industry, collaborated on NCE-funded initiatives last year—a 17% increase over the previous year.

Despite the ongoing global economic challenges, our partners increased their financial contributions by 25% over the previous year. The most notable increase came from the private sector, which contributed $83.7 million in cash and in kind towards all four programs in 2010-2011 (the Networks of Centres of Excellence program, the Centres of Excellence for Commercialization and Research (CECR) program, the Business-Led Networks of Centres of Excellence (BL-NCE) program and the Industrial Research and Development Internships (IRDI) program), compared to $44.4 million invested in the previous year.

Our partners invest much more than funding. Through the four NCE programs, they share their expertise on research and commercialization, act as mentors to emerging technology companies and provide a direct pipeline to the people who will benefit most from research-driven solutions.

Throughout this year's report, you will hear first-hand from these partners how the NCE suite of programs is helping to grow companies, add value to products and services, create jobs, increase productivity, improve patient care and develop greener practices.

The IRDI program partnered with more than 500 companies and organizations who were then supported by 974 internships last year. An additional 2,207 HQPs participated in collaborative projects through other NCE programs.

On the commercialization front, the numbers are equally impressive: 352 patents filed or issued; 59 licenses granted, 23 start-ups launched; $104 million in follow-on investments; and $206 million in foreign investment.

We are optimistic that actions taken in 2010-2011 will create opportunities for even more successes. These include a new competition for the Networks of Centres of Excellence program that places greater emphasis on applicants to be solutions-driven in collaboration with Canadian and international partners. The new Knowledge Mobilization initiative (KM) will fund national and international networks that link knowledge users and producers to accelerate the transfer and application of research results.

The NCE Secretariat also completed a third CECR competition in 2010, leading to awards for five new Centres in the areas of regenerative medicine technologies, medical imaging innovations, microelectronic businesses, monitoring technologies used in Canada's North, and the wireless industry.

Increasingly, these solutions will be delivered by small- and medium-sized enterprises (SMEs)—the lifeblood of Canada's economy. That is why the NCE earmarked $2.8 million to increase the involvement of SMEs in research and commercialization activities. The NCE awarded $1.4 million of these funds to five BL-NCE projects in 2010, with a second competition currently underway.

I would like to thank our peer review committees, Standing Selection Committee and Private Sector Advisory Board for their sage advice in helping talented research teams bring their solutions to Canadians.

The achievements realized over the past year—and over the past 22 years—would also not have been possible without the energy, enthusiasm and entrepreneurial spirit of the leadership teams of our Networks and Centres. They have built bridges between academia, industry and other partners and challenged them to find new solutions to both longstanding and emerging problems. On behalf of the Steering Committee members, I would like to thank them for their dedication and contributions.

I would also like to recognize the Government of Canada for its continued support for this unique suite of programs that demonstrates the power of collaboration in making Canada a healthier and more prosperous country.

Suzanne Fortier, PhD

Chair, NCE Steering Committee

YEAR IN REVIEW

2010-11 HIGHLIGHTS

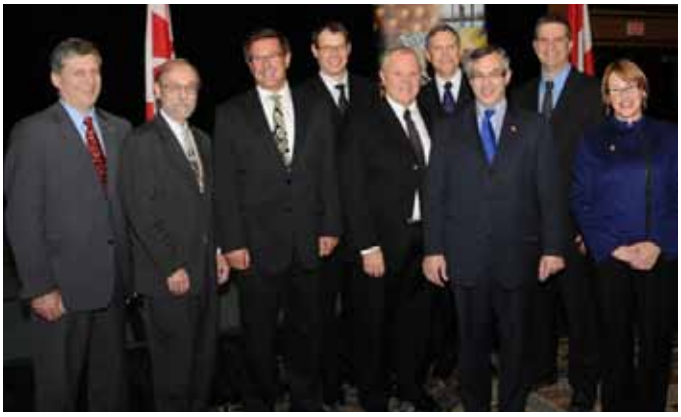
The 2010-11 year has seen the Networks of Centres of Excellence (NCE) take action on several fronts to encourage greater collaboration between those who conduct science, those who put it into practice and those who reap its benefits.

One of the highlights this past year was the NCE's annual conference on innovation and competitiveness. This was the first time the NCE partnered with ACCT Canada and Federal Partners in Technology Transfer to hold this prestigious event, which attracted more than 500 delegates from industry, academia and government.

This groundbreaking summit highlighted Canada's success in building the partnerships, networks and tools that are accelerating knowledge mobilization and commercialization to bring brilliant ideas to the marketplace faster. It provided an opportunity for Canadian leaders from the public and private sectors to share best practices, successes and challenges in critical areas such as production incubation, technology transfer and knowledge mobilization.

"I can say that your dedication, your hard work and your eagerness to collaborate with the private sector will help drive these investments to their full potential and realize real benefits for real people."

Hon. Tony Clement, (former) Minister of Industry, at Innovation 2010



Innovation 2010: (Left) Jean-Claude Gavrel (NCE), Aaron Fenster (CImTeC), Charles Randell (C-Core), Peter Zandstra (CCRM), Jim Maynard (Wavefront), Chad Gaffield (SSHRC), The Honourable Tony Clement, former Minister of Industry, Normand Bourbonnais (MIC2) and Suzanne Fortier (NSERC).

Other highlights from the past year included:

- A 17 percent increase in the number of private and public sector partners.
- A 25 percent increase in cash and in-kind financial contributions from partners (contributions from industry increased 88%).
- Three new NCEs launched operations.
- ArcticNet renewed until 2018.
- Five new CECRs awarded.
- Two BL-NCEs awarded additional funding to support participation of SMEs.
- Nine applicants invited to submit full applications for new NCEs.
- Launch of NCE-Knowledge Mobilization (KM) initiative.
- IRDI program expands with Connect Canada approval.

PARTNER PARTICIPATION GROWING

NCEs are research-driven partnerships
CECRs are public-private research and commercialization partnerships
BL-NCEs are private sector problem-driven research partnerships

One of the highlights of the past year has been the growing participation of partners, particularly participation of private sector partners in technology development and commercialization activities. A total of 3,163 partners, including 1455 from industry, participated in the NCE, CECR, BL-NCE and IRDI programs in 2010-11. That compares with 2,699 partners the year before, including 1202 from industry.

Overall, partners contributed $188 million in cash and in-kind support last year for the NCE, CECR, BL-NCE and IRDI programs—a leveraged ratio of 1.3:1. This compares with contributions of $150.3 million and a leveraged ratio of 1.2:1 for all four programs in 2009-10.

The most notable increase in funding came from the private sector, which contributed $83.7 million toward all four programs in 2010-11, compared with $44.4 million in the previous year.

Beyond the increase in leveraging for the program as a whole, centres are also beginning to report on significant follow-on investment received by partner firms and spin-offs that have resulted from the seed-funding and business acceleration supports provided by the CECRs.

The value of in-kind contributions

Industry partners contribute time, resources and access to specialized equipment and facilities—in addition to direct financial contributions. For example, Bell Helicopter in Mirabel, Quebec, is providing ArboraNano access to its specialized testing facilities for polymer composites. Another ArboraNano partner, Montreal-based Nanoledge, is sharing its expertise in integrating nanoparticles with other materials.

In addition to financial resources, partners often participate on boards of directors, advisory committees and research review panels. For CECRs and BL-NCEs, in particular, private sector partners provide advice on the design of R&D programs, new company creation, seed funds, royalty structures and other commercialization activities, in addition to acting as mentors to SME partners and start-ups. Larger industry partners may contribute money for technology development or as seed funding to help start-ups grow.

RENEWAL OF ARCTICNET TO SUPPORT CANADA'S NORTHERN STRATEGY

In 2010-11, the NCE Steering Committee approved ArcticNet's application for renewal and additional funding of $67.3 million—the largest funding renewal for the NCE program to date. The mission of this world-leading network is to help adapt the coastal Canadian Arctic to climate change and modernization.

During its first cycle of funding (2004-2011), ArcticNet transformed Arctic research in Canada. It brought together the best Arctic specialists and their international collaborators to inform policies and decisions related to the north. Over 145 ArcticNet researchers and 580 graduate students, post-doctoral fellows, research associates and technicians from 30 Canadian universities, 8 federal and 11 provincial departments and agencies collaborate on 36 research projects with over 100 partner organizations from 15 countries.

Over the next funding cycle (2011-2018), ArcticNet will contribute to the science base of Canada's new Northern Strategy. In addition to 22 established research projects and two new Canada Excellence Research Chairs, the Network will pursue the implementation of 12 new research projects focusing on Inuit health, education and culture. Each project addresses key aspects of the four pillars of Canada's Northern Strategy: Sovereignty, Economic and Social Development, Environmental Protection, and Governance.

One of ArcticNet's strengths is stakeholder participation. Last year, the Network forged nearly 200 industry, academic and public sector partnerships. For the next funding cycle, partners have already committed over $75 million.

NEWEST NCES HIT GROUND RUNNING

The NCE's newest networks launched operations in 2010 to address three areas of national importance: researching effective treatments to help children with developmental brain disorders, finding ways to lessen the impact of fossil fuels on the environment, and using social media to improve education and skills development.

Below is a brief update on some of their early impacts to date.

GRAPHICS, ANIMATION AND NEW MEDIA CANADA (GRAND) NETWORK

GRAND has cultivated partnerships with a number of organizations to extend the reach of its research program to a number of areas in which digital media holds significant promise for delivering social or economic benefits to Canadians. They include:

- a suite of projects co-funded with the NeuroDevNet NCE are examining how game technology can be used to assess and treat neurodevelopmental disorders such as attention deficit spectrum disorder, fetal alcohol spectrum disorder, and cerebral palsy;
- a project co-funded with the Pacific Institute for Climate Solutions is examining how digital media can be employed within civic discussions of issues related to sustainability;
- a memorandum of understanding has been signed with the French research organization INRIA regarding a multi-year collaboration on computer graphics and related topics under which a series of exchange visits and joint research will take place.

NEURODEVNET

NeuroDevNet is establishing strong relationships with stakeholders to improve the quality of life for people with neurodevelopmental disorders. Over the last year, it organized two public forums to discuss important issues relating to autism and cerebral palsy research with parents, communities, policy-makers, not-for-profit organizations and health professionals.

The Network has also teamed with the TELUS Toronto Community Board to support Canadian research that uses new technologies to assist children with brain development disorders. In this project, Dr. Alex Mihailidis, a NeuroDevNet researcher based at the Toronto Rehabilitation Institute, will develop smart home technologies that help children with autism spectrum disorders learn to become more independent.

> *"The TELUS Toronto Community Board is pleased to fund this project because we recognize that this smart home technology can truly make a difference in the lives of children with autism. We are committed to giving where we live to help build better communities and are excited to work with NeuroDevNet on this exciting project."*
>
> ***Rita Burak, Chair, TELUS Toronto Community Board***

CARBON MANAGEMENT CANADA

Carbon Management Canada has developed a first-of-its-kind online platform where government, industry and academic researchers from around the world can collaborate and share knowledge on reducing carbon emissions to the atmosphere. The Carbon Commons will also enable research teams to "walk the walk" on carbon emissions by using videoconferencing and other virtual collaboration tools to reduce travel expenses to meet with colleagues.

A FAREWELL TO RETIRING NCES

Four networks from the Network of Centres of Excellence program completed their activities this past year. One network, the ISIS Canada Research Network, was awarded Management Funds (2009-2011) to wrap up 14 years of research. The other three, PREVnet, the Canadian Obesity Network and The National Initiative for the Care of the Elderly, were grantees of the Networks of Centres of Excellence New Initiatives program.

ISIS CANADA RESEARCH NETWORK

Set up in 1995, ISIS Canada Research Network's mandate was to advance civil engineering to a world leadership position through the development and application of fibre reinforced polymers (FRPS) and integrated intelligent fibre optic sensing (FOS) technologies for the benefit of Canadians through innovative and intelligent infrastructure.

One of the important legacies of the ISIS Canada Research Network is the series of eight design manuals that were published to provide practicing engineers with detailed guidelines regarding the use of FRPs and FOSSs in the design and construction of civil engineering structures. MF funding for 2009 to 2011 allowed ISIS to fulfill its objective of including all the knowledge gained through the research program up to the spring of 2009 in the final edition of the ISIS design manuals. Over the past two years, members of the ISIS Canada Network Association, working with thee ISIS Canada Research Network, have undertaken to update several key modules and manuals dealing with the use of FRP in structures. The updates reflect the most current research as well as recent changes made to the Canadian Highway Bridge Design Code (CHBDC) CSA S6 –10.

Among the foremost achievements of ISIS Canada was the revision in 2006 of the CHBDC CSA S06-06, which was updated to include the use of ISIS design standards and technologies. When the ISIS design manuals were revised with new case studies and new information resulting from studies into life cycle engineering and material durability, the need arose to update section 16 of the CHBDC. The MF awarded to ISIS allowed researchers to implement the results of their recent research (2006-09) to amend the code. The significant changes that have been made in the amendment to Section 16 are:

1. Changes to the resistance factors. These have been slightly increased to satisfy the calibration stipulation of the code.
2. The calculation of thee residual strength index, Ri, has to be calculated by two ASTM standards. The values of Ri have been increased to minimize the shrinkage cracking.
3. The Design for Shear clause has been updated to reflect the current state of the research.

Section 16 of the code and commentary has been streamlined and simplified for ease of use.

NETWORKS OF CENTRES OF EXCELLENCE NEW INITIATIVES

Networks of Centres of Excellence New Initiatives (NCE-NI) was established in 2005 as a pilot program. It supported networking activities and collaboration among well-established research teams and receptor communities to further the application and mobilization of knowledge. The program was intended to help national, multi-disciplinary and multi-sectoral networks apply and mobilize the results of world-class research. The NCE-NI was made permanent in 2010. Below are brief highlights of the retiring grantees accomplishments.

PREVNET

The primary focus of PREVNet (Promoting Relationships and Eliminating Violence Network) was to build collaborative and trusting relationships within the Network, and to enhance bullying prevention knowledge and practice of adults involved with children and youth. With researchers and partners in the NCE-NI, the Network co-created more than 80 organization-specific bullying prevention initiatives, including educational presentations, activities, and resources. Through these network activities, a research-positive culture was developed among partners, in which evidence-based knowledge and practice are viewed as necessities and vital to organizational effectiveness and advancement. In Canada and beyond, PREVNet is now recognized as the authoritative voice for the prevention of violence and the promotion of healthy relationships.

PREVNet began as a network of 21 researchers and over five years expanded to 62 researchers from 27 Canadian universities, in 15 different disciplines. In those five years, PREVNet's researchers wrote more than 675 journal articles, 230 book chapters, 30 books, and 120 reports and delivered more than 800 presentations and workshops in Canada and internationally. In addition, the NCE-NI program has enabled PREVNet researchers to secure more than $36 million in new grants. Over the NCE-NI grant period, PREVNet partner organizations provided more than $2.1 million in cash contributions and close to $1 million in in-kind contributions.

PREVNet is successfully creating social-cultural change in Canada regarding the use of power and aggression in relationships and the importance of healthy relationships for children and youth. By promoting healthy relationships, PREVNet and its partners are laying the foundation for long-term economic, health and social well-being for Canadians.

THE CANADIAN OBESITY NETWORK

The Canadian Obesity Network (CON-RCO) has acted as a catalyst for addressing obesity in Canada and to foster knowledge translation, capacity building, and partnerships among stakeholders so that researchers, health professionals, policy-makers and other stakeholders may develop effective solutions to treat, and to prevent obesity.

The CON-RCO has continuously attracted individuals and organizations with a professional interest in obesity. Growth of the Network has increased steadily from just 120 to over 5,500 members—thus establishing the largest multidisciplinary obesity research and practice network in the world. Today, CON-RCO is the only national organization exclusively dedicated to the prevention and control of obesity. It is widely recognized by Canadian health professionals, decision makers and industry as a "one-stop source" for credible, reliable and unbiased obesity expertise.

CON-RCO has also created a platform for multi-sectoral collaborations that will ensure the sustainability of the Network's activities beyond the NCE-NI funding. The Network can now count over 150 partners and collaborators. Over the past five years, CON-RCO has generated a substantial dividend on the original NCE investment of $2.0 million by raising an additional $7.7 million in cash and measurable in-kind contributions from its partners and stakeholders.

NATIONAL INITIATIVE FOR THE CARE OF THE ELDERLY

The overarching goals of the National Initiative for the Care of the Elderly (NICE) have been to disseminate interdisciplinary evidence-based research/best practices across the researcher-practitioner continuum; to address training shortages in the care of the elderly; to introduce, enhance and/or improve geriatric and gerontological curriculums; and effect positive policy changes in the care of Canada's elderly.

NICE has made important advances toward these goals. With respect to closing the gap between evidence and practice, NICE has developed and disseminated new and existing tools. As well, it has struck new partnerships for dissemination, and has established a new team to respond to members' requests and bring knowledge mobilization activities to that area. The Network's sub-committees have likewise worked toward the educational goals of improving recruitment and geriatric/gerontological curriculums in Canada by administering the fourth year of the NICE Student Mentorship Program. The sub-committees also developed and continue to disseminate interdisciplinary competencies for providing care to older adults and provided unique, interactive training opportunities in knowledge translation for members at each Annual Knowledge Exchange.

Over the five years of NCE funding, NICE has expanded from a membership of 88 to an international network of over 1,460 researchers, practitioners, students and seniors dedicated to improving the care of older adults. Members represent a broad spectrum of disciplines and professions and NICE has researcher and student partners in nine countries. NICE has actively sought new avenues of support and has been successful in raising over $1.75 million in additional funds.

EVALUATING EXCELLENCE AND MEASURING IMPACT

PEER REVIEW

To ensure that only the best applicants are funded and that all applicants are treated fairly, the NCE program follows a rigorous peer-review evaluation system.

All Letters of Intent are evaluated against the criteria of the program as are the full proposals that follow.

Applications for NCE networks are assessed by expert panels made up of impartial international experts with broad expertise representing the domains of the three federal granting agencies. A selection committee reviews the assessments and makes recommendations to the NCE Steering Committee, which makes the final decision.

In 2010-11, the NCE Steering Committee decided to appoint a permanent Standing Selection Committee, rather than a new committee for each competition. This 23-member committee is made up of high-calibre, international experts with broad expertise in the domains of the three granting agencies.

Applications for CECRs and BL-NCEs are also assessed by expert panels, meeting the same rigorous standards as the NCE networks. Their assessments are passed on to the Private Sector Advisory Board (PSAB), comprised of scientists, research managers and professionals with experience in business, innovation and commercialization. The PSAB reviews the reports of the expert panels and provides a recommendation to the NCE Steering Committee on candidates worthy of funding.

CECR and BL-NCE applicants are assessed for their benefits to Canada, track record and potential of the applications, and the strength of the business plan. The Steering Committee then decides which CECRs and BL-NCEs will receive funding.

CECR PROGRAM REVIEWS

The NCE secretariat launched two separate reviews in 2010-11 of the CECR program. The PSAB is reviewing the progress of the program to date and will make recommendations for strengthening the program in future competitions. The PSAB report will complement a formal program evaluation being conducted by a third party to assess the extent to which the program is meeting its objectives and delivering value for money. Both reviews will be released in fiscal year 2011-12.

ENHANCED REPORTING MODEL

The NCE Secretariat hopes to expand its role in the activities of the Consortia Advancing Standards in Research Administration Information (CASRAI). A member since 2008, the NCE Secretariat is encouraging grantee NCE networks and centres to join CASRAI through the NCE Associate Cluster and be part of this important harmonization process.

CASRAI is a not-for-profit organization that provides a forum and the mechanisms required to standardize the data that researchers, their institutions and their funders must exchange throughout the life cycle of research activity. These data standards are developed and maintained under the direction of subject matter experts from member organizations through standards committees and review circles. The four main areas of focus are research personnel standards, activity standards, impact standards and classification standards.

2012 COMPETITION FOCUSES ON SOLUTIONS

The NCE received 32 eligible Letters of Intent in 2010 for its 2012 NCE networks competition. Of those, nine were invited to submit full applications.

This competition is putting an even greater emphasis on transforming promising research into solutions that benefit Canada. The NCE is looking for applicants that demonstrate world-class capacity to address the problems, challenges or opportunities that strengthen Canada's international leadership in areas of importance to Canada. It is expected that networks will address complex issues with multi-faceted approaches, be solution-driven and involve Canadian and international partners and receptors.

New networks are eligible to receive funding for up to two five-year terms, with the potential for a third five-year term to assist in transforming the network into a partner-driven network.

The networks will address one or more of the following 13 research sub-priority areas identified by the Science, Technology and Innovation Council:

Environmental science and technologies

1. water (health, energy, security)
2. cleaner methods of extracting, processing and using hydrocarbon fuels, including reduced consumption of these fuels

Natural resources and energy

3. energy production in the oil sands
4. Arctic (resource production, climate change adaptation, monitoring)
5. biofuels, fuel cells and nuclear energy

Health and related life sciences and technologies

6. regenerative medicine
7. neuroscience
8. health in an aging population
9. biomedical engineering and medical technologies

Information and communication technologies

10. new media, animation and games
11. wireless networks and services
12. broadband networks
13. telecom equipment.

SUPPORT FOR KNOWLEDGE MOBILIZATION INCREASES

PROGRAM CRITERIA

- Excellence of the research program
- Development of highly qualified personnel
- Networking and partnerships
- Knowledge and technology exchange and exploitation
- Management of the Network

In 2005, the NCE launched a pilot initiative to support networking among well-established researchers or research teams to encourage them to develop new partnerships with receptor communities. An evaluation of the NCE-New Initiative in 2008 found that the program added value for multidisciplinary and collaborative research involving academics and community receptors in Canada. Consequently, the NCE Steering Committee approved a follow-on initiative—NCE-Knowledge Mobilization (KM).

Launched in the summer of 2010, the KM will provide up to $400,000 for four years to national and international networks that link knowledge users and producers. A second (and final) funding cycle of three years will be available where an NCE-KM network can demonstrate it has progressively transformed itself into a receptor-centred network.

The goal of KM is not to fund research. Rather, successful applicants will work alongside the best minds in academia, industry, governments and not-for-profit organizations to collaborate and network across many sectors, and focus on the transfer and application of new knowledge that brings improved social, health and/or economic benefits to Canadians.

In response to its call for applications, the NCE received 50 Letters of Intent by September 2010, with eight being invited to submit full proposals by April 5, 2011.

NCE EXPANDS INTERNSHIP PROGRAM

The Industrial R&D Internship (IRDI) program addresses Canada's ongoing need for highly qualified workers. The program places graduate and post-doctoral students strategically in private sector organizations and provides them with the opportunity to solve critical and relevant industry problems. The IRDI program benefits both the intern by offering practical experience in his or her field, and the industry partner by providing a highly skilled intern with research knowledge and experience.

A total of 974 graduate internships were supported in 2010-11, compared with 801 in the previous year—nearing the program's goal of providing 1,000 internships per year in all academic disciplines.

The number of participating companies also increased significantly to 505 in 2010-11 from 406 in 2009-10.

Those numbers are projected to go even higher as a result of a competition held in 2010 that resulted in a new model with two delivery agents: Mitacs-Accelerate and Auto21-Connect. Together, they were awarded a total of $34.4 million over five years to provide 1,000 internships each year in private sector firms.

Established in 2008 and renewed in 2010, Mitacs-Accelerate connects businesses with graduate students and post-doctoral fellows who apply their specialized skills to real-world research challenges. Students have the opportunity to translate their skills from theory into practice, while businesses gain a competitive advantage by accessing high-quality research expertise.

The IRDI Selection Committee also approved an application from Connect Canada, managed by AUTO21 Inc. and the University of Windsor Centre for Career Education. Connect Canada links Canadian companies with graduate students for research placements in the manufacturing, green technology and other key economic sectors.

SOLUTIONS FOR BUSINESS AND EXPERIENCE FOR STUDENTS

- IRDI links university faculty and graduate students/ post-doctoral fellows in any department or discipline, with Canadian companies
- 4 to 6 month research internship, of which approximately 50 percent of the time is spent with the industry partner
- $15,000 grant, of which minimum $10,000 is student stipend
- Cost shared 50/50 between the industry partner and IRDI organization
- Multiple internships permitted (proposal can cover up to 12 months).

NEWEST COMMERCIALIZATION "FACTORIES" RAMP UP OPERATIONS

The NCE Secretariat completed a third CECR competition in 2010, leading to five new centres being awarded. The centres will share $61.1 million over five years to pursue major product innovations and bring those discoveries to the marketplace. Each of these new centres was selected following a rigorous peer review process involving expert panels and the Private Sector Advisory Board.

CENTRE FOR COMMERCIALIZATION OF REGENERATIVE MEDICINE – CCRM

Toronto, Ontario ($15,000,000)
CCRM works with its members and an industry consortium to address the barriers faced by the Canadian regenerative medicine (RM) industry, such as the licensing of early-stage RM technologies to companies outside Canada before their market value is realized.

CENTRE FOR IMAGING TECHNOLOGY COMMERCIALIZATION – CIMTEC

London, Ontario ($13,310,785)
CImTeC tackles the obstacles faced by Canadian medical imaging companies, such as limited access to medical imaging equipment, that prevent the rapid commercialization of diagnostic imaging technologies emerging from Canadian universities and research centres.

LEADING OPERATIONAL OBSERVATIONS AND KNOWLEDGE FOR THE NORTH – LOOKNORTH

St. John's, Newfoundland and Labrador ($7,107,000)
LOOKNorth is enabling its network of industry and research partners to build on Canada's monitoring technologies industry, helping to ensure safe and sustainable resource development in remote, challenging and environmentally sensitive northern regions.

MIQRO INNOVATION COLLABORATIVE CENTRE – C2MI

Bromont, Quebec ($14,078,965)
C2MI works with its members to foster the growth of the microelectronics industry in Quebec and across Canada, which will generate wealth and employment in the knowledge sector.

WAVEFRONT

Vancouver, British Columbia ($11,593,000)
Wavefront provides small and medium-sized enterprises with access to resources normally beyond their reach and helps connect researchers from Canadian academic institutions with commercially viable innovations to suitable industry partners.

ENGAGING SMES TO DELIVER SOLUTIONS

Small and medium-sized enterprises (SMEs) are critical to Canada's prosperity. Their success affects the well-being of the Canadian economy and society as engines of job creation, economic growth and innovation. They are also a catalyst for research and innovation.

A portion of the BL-NCE funding, $2.8 million, is earmarked to increase the involvement of SMEs in research and commercialization activities. In response to an NCE Secretariat call for proposals in 2010, two of the four existing BL-NCEs—Consortium Quebecois sur la Decouverte du Medicament (CQDM) and Green Aviation Research & Development Network (GARDN)—submitted a total of seven projects for funding.

The PSAB met in Ottawa on October 6, 2010, to make recommendations to the NCE Steering Committee on the proposals. After a thorough review, the PSAB concluded that five of the seven submitted projects met the required threshold of excellence, as evaluated against the following criteria:

1. the extent to which the project will increase both industry capacity for, and receptivity to, research and development (including among SMEs);
2. evidence that the project will lead to commercialization benefits that position Canadian firms in high-value segments of production chains;
3. the extent to which the applicants demonstrate their ability to strengthen domestic collaborations and ensure that benefits spread to a wide array of firms, sectors and regions of the country; and
4. the extent to which the project offers the opportunity to create, grow and retain companies in Canada that are able to capture new markets with new innovations.

The following five projects will share $1.4 million:

5. Development and multi-parametric phenotyping of an inducible mouse model of Alzheimer's disease (CQDM)
   Funding: $375,500
6. Identification of hyper secretion-regulating target proteins and biomarkers for diagnosis and prognosis in neuro-endocrine tumors (CQDM)
   Funding: $375,800
7. Landing gear noise diagnostics and prediction model (GARDN)
   Funding: $69,150
8. Biologic and process technologies for renewable jet fuel (GARDN)
   Funding: $483,900
9. Developing particulate measuring methods for non-volatile particulate emissions from aircraft (GARDN)
   Funding: $113,600

The NCE also launched a second competition early in 2011 for the remaining funds. Applications will be reviewed by the PSAB in October 2011.

LINKING SMES WITH LARGE COMPANIES

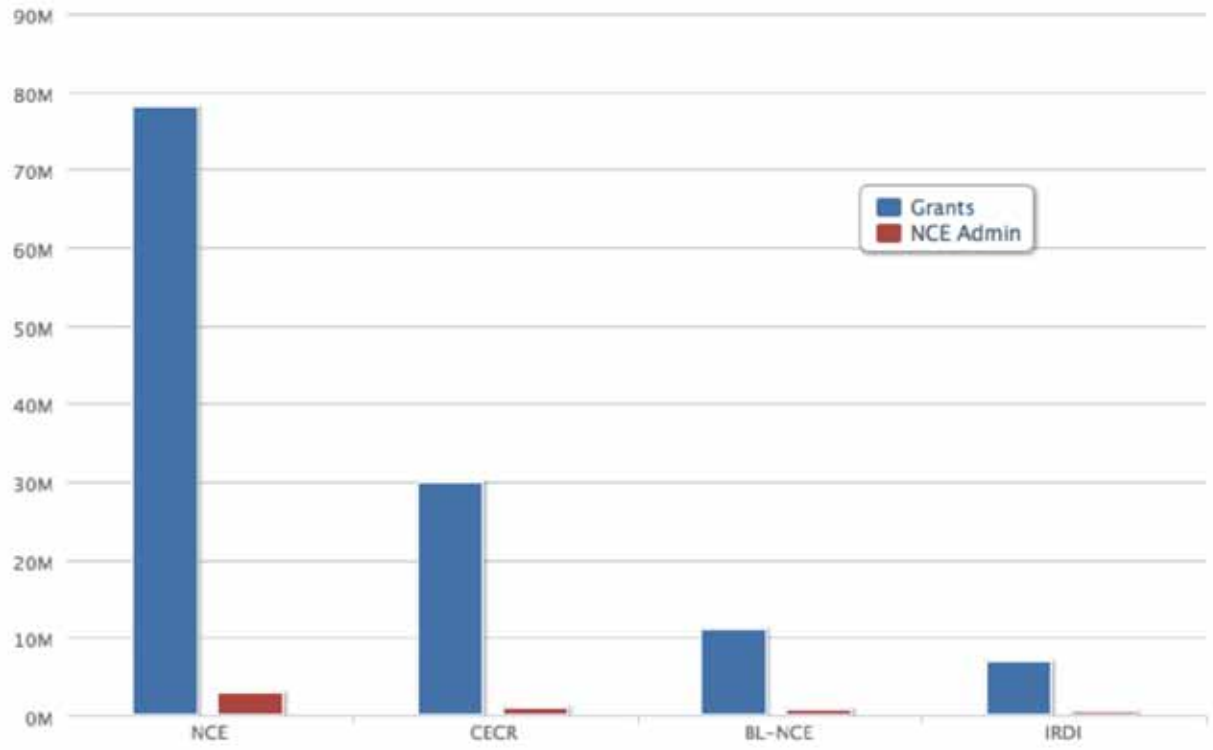
CQDM was awarded $751,242from the NCE in 2010 to stimulate the involvement of two SMEs (Caprion Proteomics and Biospectives) into new international partnerships. CQDM is also helping Caprion develop a more sustainable business model by expanding beyond a fee-for-service company through the development of proprietary technologies that generate ongoing licensing fees.

NCE BY THE NUMBERS

FOR MORE THAN 22 YEARS, THE NCE PROGRAMS HAVE EVOLVED TO MOBILIZE CANADA'S BEST RESEARCH TALENT IN THE ACADEMIC, PRIVATE, AND PUBLIC SECTORS, AND TO APPLY IT TO THE TASK OF DEVELOPING THE ECONOMY AND IMPROVING THE QUALITY OF LIFE OF CANADIANS.

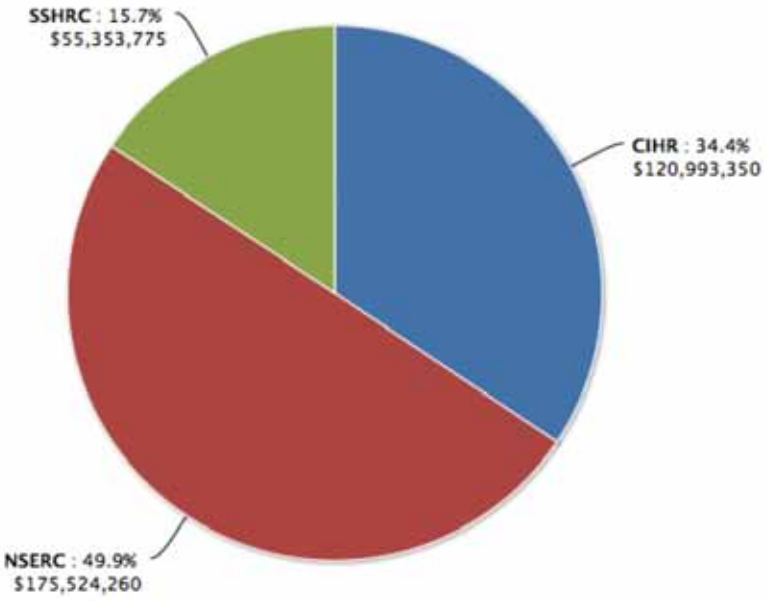
This section illustrates the 20010-11 overall data on all NCE programs.

GENERAL –
NCE SECRETARIAT FUNDING



	NCE	CECR	BL-NCE	IRDI	Total
Grants	$78,171,500	$29,813,625	$11,134,750	$6,880,000	$125,999,875
NCE Admin	$2,900,000	$1,014,875	$865,250	$119,875	$4,900,000
Total	**$81,071,500**	**$30,828,500**	**$12,000,000**	**$6,999,875**	**$130,899,875**

PROGRAM FUNDING THROUGH GRANTING AGENCIES

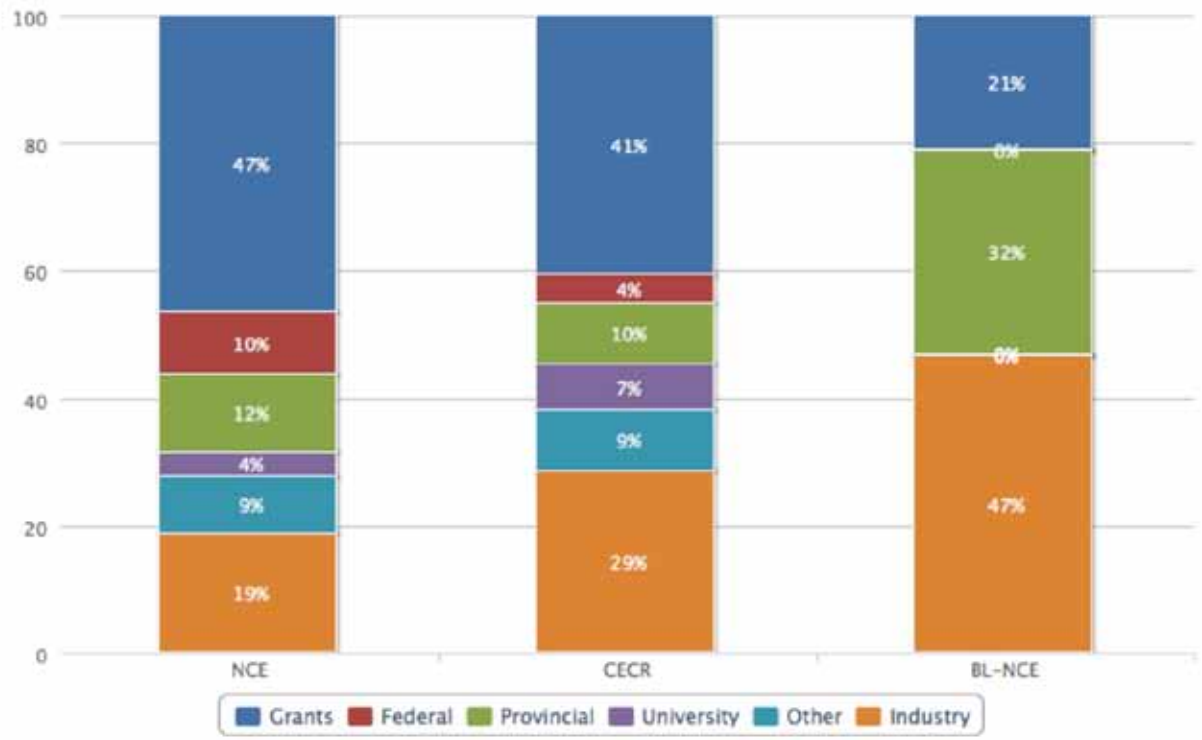


Granting Agency	NCE	BL-NCE	CECR*	IRDI	Total
CIHR	$27,100,000	$1,737,000	$92,156,350	-	$120,993,350
NSERC	$39,871,500	$8,414,750	$120,358,010	$6,880,000	$175,524,260
SSHRC	$11,200,000	$983,000	$43,170,775	-	$55,353,775
Grants Total	**$78,171,500**	**$11,134,750**	**$255,685,135**	**$6,880,000**	**$351,871,385**

Note*: CECR Funding is for 2007-2011

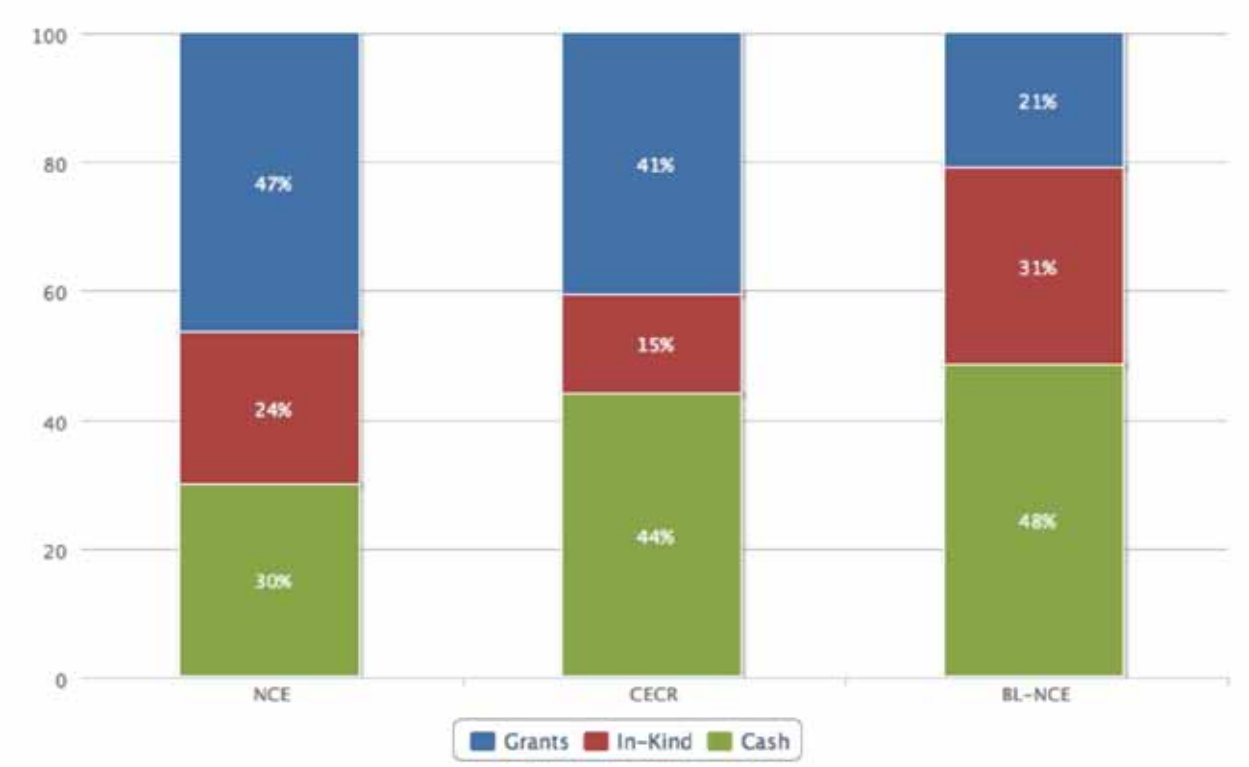
IRDI grants are $6,880,000

NCE PARTNER CONTRIBUTIONS BY SECTOR



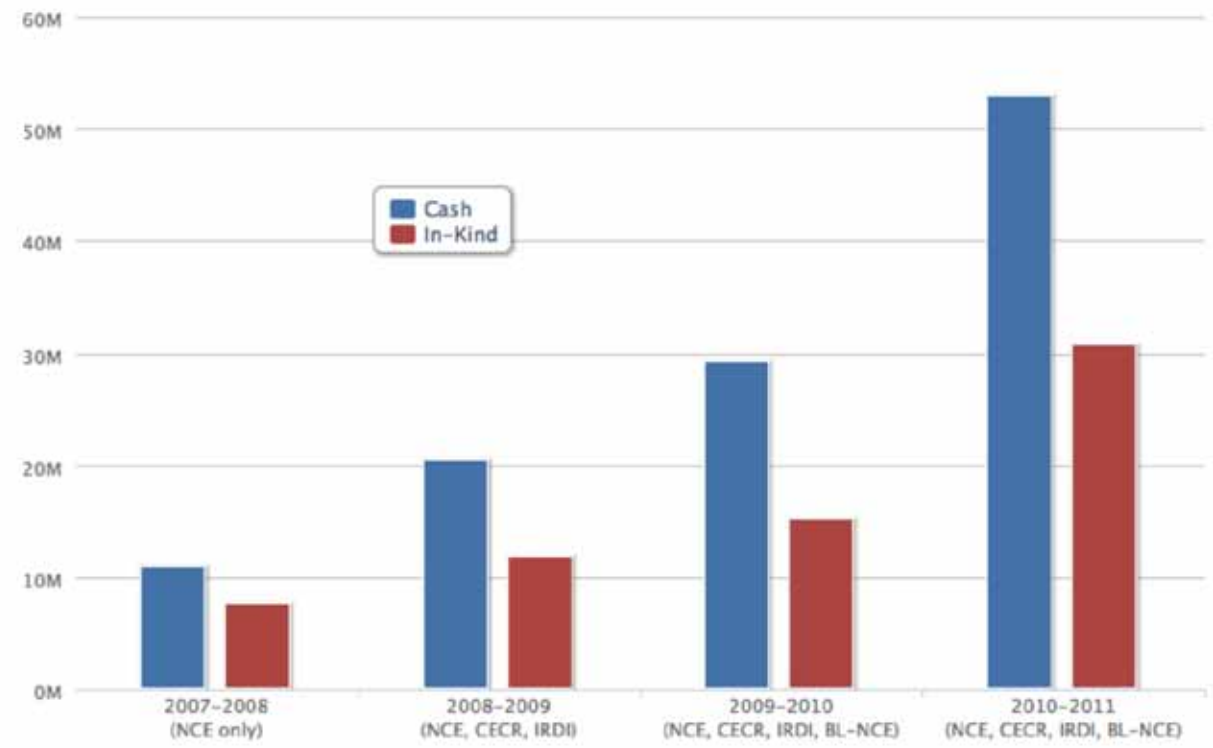
NCE	Industry	Other	University	Provincial	Other Federal	Total Partner Contributions	Expenditures from NCE Grants
NCE	$31,669,460	$15,121,715	$6,296,922	$20,338,073	$16,340,946	$89,767,117	$78,136,754
CECR	$35,034,803	$11,562,403	$8,773,095	$11,946,656	$5,316,022	$72,632,980	$49,784,441
BL-NCE	$11,628,638	$46,520	$22,560	$7,915,860	$104,720	$19,718,298	$5,179,942

NCE PARTNER CONTRIBUTIONS BY PROGRAM



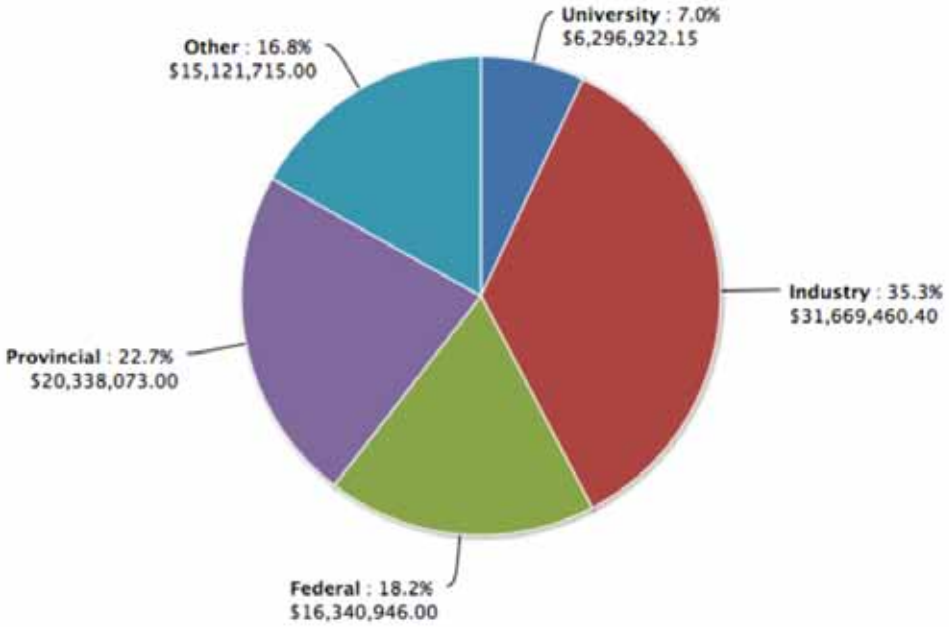
NCE	Cash	In-Kind	Total Partner Contributions	Expenditures from NCE Grants
NCE	$50,061,055	$39,706,062	$89,767,117	$78,136,754
CECR	$53,771,303	$18,861,676	$72,632,980	$49,784,441
BL-NCE	$12,064,520	$7,653,778	$19,718,298	$5,179,942

INDUSTRY CONTRIBUTIONS 2007-2010



	Cash	In-Kind	Total
2007-2008 (NCE only)	$10,975,287	$7,657,316	$18,632,603
2008-2009 (NCE, CECR, IRDI)	$20,416,206	$11,814,775	$32,230,981
2009-2010 (NCE, CECR, IRDI, BL-NCE)	$29,266,280	$15,150,208	$44,418,488
2010-2011 (NCE, CECR, IRDI, BL-NCE)	$52,921,631	$30,821,971	$83,743,602

PROGRAMS –
NETWORKS OF CENTRES OF EXCELLENCE (NCE)
PARTNER CONTRIBUTIONS



	Cash	In-Kind	Total
NCE Program	$78,171,500.00		$78,171,500.00
Partners			
University	$2,010,734.15	$4,286,188.00	$6,296,922.15
Industry	$15,531,140.40	$16,138,320.00	$31,669,460.40
Federal	$7,244,579.00	$9,096,367.00	$16,340,946.00
Provincial	$17,287,359.00	$3,050,714.00	$20,338,073.00
Other	$7,987,242.00	$7,134,473.00	$15,121,715.00
Partner's Total	**$50,061,054.55**	**$39,706,062.00**	**$89,767,116.55**
Grand Total	**$128,232,554.55**	**$39,706,062.00**	**$167,938,616.55**

NETWORKS OF CENTRES OF EXCELLENCE (NCE)
PATENTS, LICENCES, PUBLICATIONS, SPIN-OFFS COMPANIES

Patents	Total
Filed	93
Issued	8
Licenses	**Total**
Granted	27
Under negotiation	20
Publications	**Total**
Refereed	4338
Non-refereed	2475
SPIN-OFF COMPANIES	**Total**
	6

Names of spin off companies for 2010-11

Name	City	Province	Network
Respirylite	Edmonton	Alberta	Allergen
FiLaser	Toronto	Ontario	CIPI
LaserAX	Quebec	Quebec	CIPI
MolecuLight Inc	Toronto	Ontario	CIPI
GridCentric	Toronto	ON	MPrime
Syntheteq Labs	Edmonton	AB	PrioNet

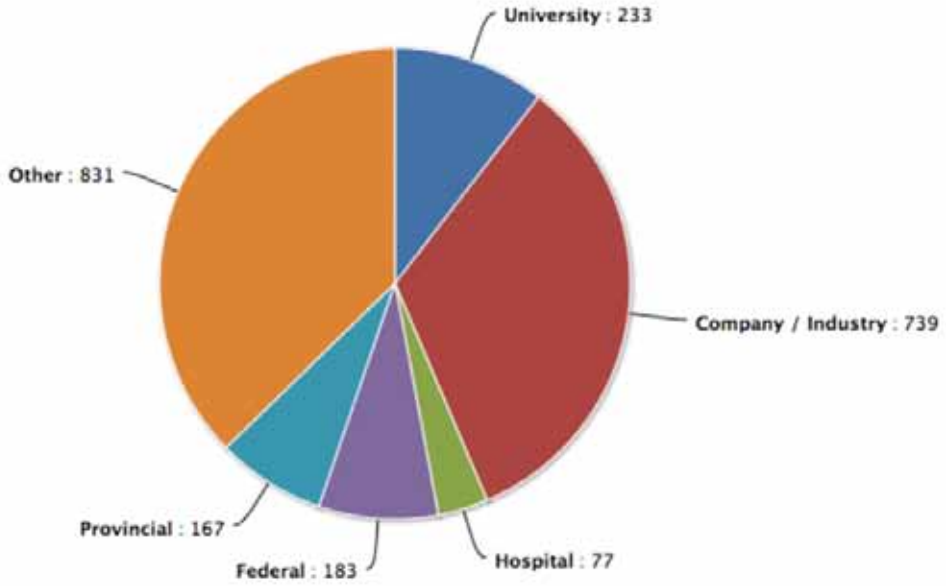
NETWORKS OF CENTRES OF EXCELLENCE (NCE)
REGIONAL DISTRIBUTION OF RESEARCHERS AND HQP*

	NCE Program Researchers			Highly Qualified Personnel			
Province / Territory	University	Non-University	Total Researchers	HQP supported by NCE funds	HQP supported by non-NCE funds	Total HQP	Total Personnel
NWT, Nunavut & Yukon	0	0	0	5	4	9	9
British Columbia	264	22	286	297	309	606	892
Alberta	276	6	282	239	295	534	816
Saskatchewan	25	2	27	30	38	68	95
Manitoba	45	8	53	80	70	150	203
Ontario	566	111	677	762	1151	1913	2590
Québec	263	27	290	327	635	962	1252
New Brunswick	25	0	25	12	14	26	51
Nova Scotia	38	1	39	41	60	101	140
Newfoundland and Labrador	14	1	15	30	13	43	58
Prince Edward Island	2	0	2	2	2	4	6
Total Canadian	**1518**	**178**	**1696**	**1825**	**2591**	**4416**	**6112**
Foreign	15	8	23	10	10	20	43
Grand Total	**1533**	**186**	**1719**	**1835**	**2601**	**4436**	**6155**

* Highly Qualified Personnel refers to research staff such as research associates and technicians, and research trainees such as postdoctoral fellows, graduate students and summer students

NETWORKS OF CENTRES OF EXCELLENCE (NCE)
PARTICIPATING ORGANIZATIONS

Each organization is only counted once, regardless of the number of networks to which it relates.

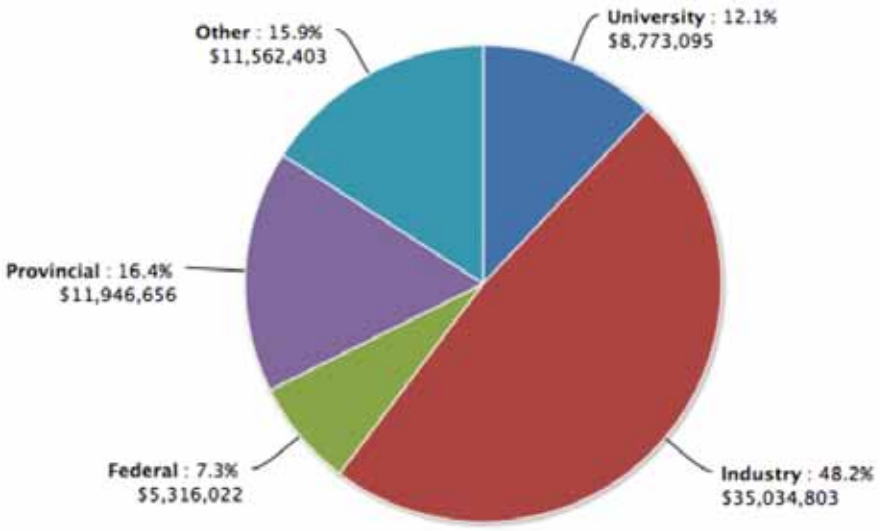


Province	University	Company / Industry	Hospital	Federal	Provincial	Other	Total
NWT, NUNAVUT, Yukon	0	4	0	5	10	37	56
British Columbia	12	67	5	11	27	91	213
Alberta	6	75	7	10	28	63	189
Saskatchewan	3	5	2	4	5	12	31
Manitoba	5	12	3	8	14	17	59
Ontario	21	298	30	96	36	354	835
Quebec	23	116	19	18	30	97	303
New Brunswick	4	5	0	4	4	7	24
Nova Scotia	7	12	1	5	6	21	52
Newfoundland and Labrador	1	5	0	6	4	5	21
Prince Edward Island	1	3	0	0	1	0	5
Total Canadian	**83**	**602**	**67**	**167**	**165**	**704**	**1788**
Foreign	150	137	10	16	2	127	442
Total	**233**	**739**	**77**	**183**	**167**	**831**	**2230**

NETWORKS OF CENTRES OF EXCELLENCE (NCE)
REGIONAL DISTRIBUTION OF NCE PROGRAM FUNDS - EXPENDITURES

Province / Territory	NCE Expenditures - $ Total
British Columbia	$14,648,118
Alberta	$7,406,893
Saskatchewan	$1,297,728
Manitoba	$2,690,922
Ontario	$35,881,704
Québec	$14,264,798
New Brunswick	$357,135
Nova Scotia	$1,027,168
Newfoundland and Labrador	$529,066
Prince Edward Island	$33,223
Grand Total	**$78,136,754**

CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH (CECR)
PARTNER CONTRIBUTIONS

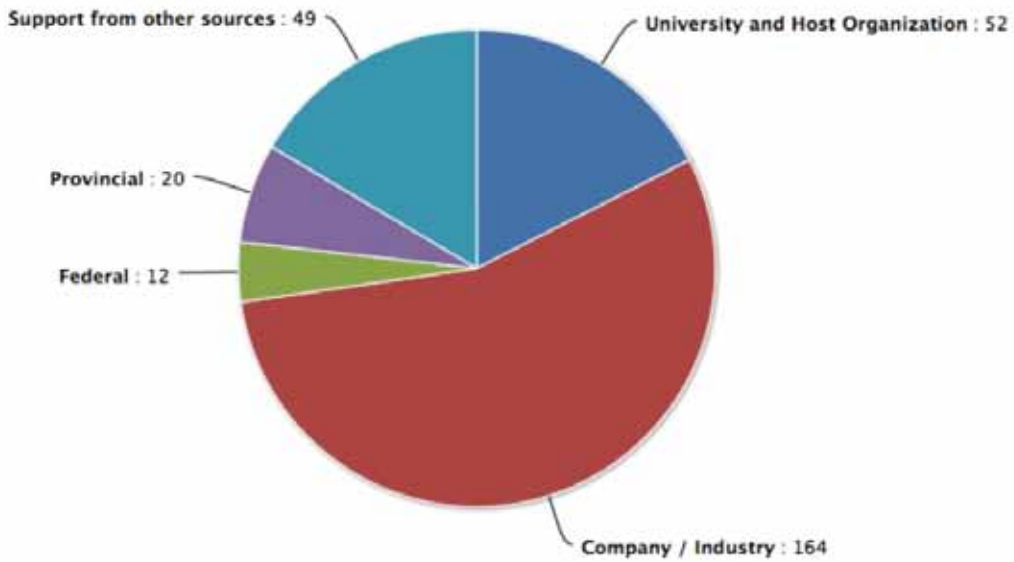


Source	Cash	In-Kind	Total
CECR	$29,813,625		$29,813,625
Partners			
University	$3,084,612	$5,688,483	$8,773,095
Industry	$27,464,915	$7,569,888	$35,034,803
Federal	$4,590,812	$725,210	$5,316,022
Provincial	$11,847,290	$99,366	$11,946,656
Other	$6,783,674	$4,778,729	$11,562,403
Partners Total	**$53,771,303**	**$18,861,676**	**$72,632,980**
Grand Total	**$83,584,928**	**$18,861,676**	**$102,446,605**

Partner Contributions = Eligible contributions to the CECR program as specified in the Tri-Agency Financial Administration Guide and the CECR Program Guide

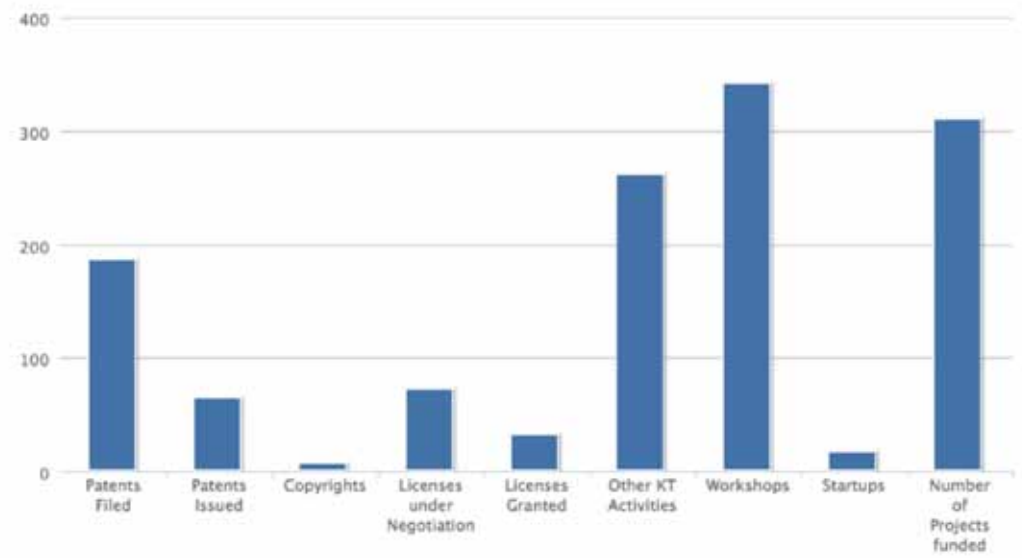
CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH (CECR)
PARTICIPATING ORGANIZATIONS

Each organization is only counted once, regardless of the number of centres to which it relates.



	University and Host Organization	Company / Industry	Federal	Provincial	Support from other sources	Total
British Columbia	10	21	3	3	13	50
Prairies	1	3	1	3	2	10
Ontario	32	89	7	7	13	148
Québec	2	22	1	5	11	41
Atlantic	2	7	0	2	0	11
International	5	22	0	0	10	37
Total	**52**	**164**	**12**	**20**	**49**	**297**

CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH (CECR)
KNOWLEDGE TRANSLATION ACTIVITIES



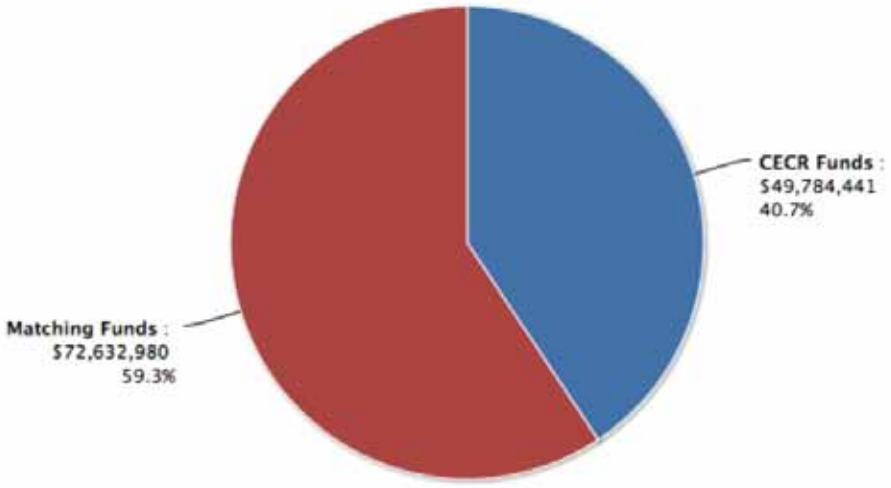
Fiscal Year: 2010-2011

Products and Innovations						Other Collaborations and Interactions		
Patents Filed	Patents Issued	Copyrights	Licenses under Negotiation	Licenses Granted	Other KT Activities	Workshops	Startups	Number of Projects funded
166	65	7	72	32	261	342	17	310

Names of start-up companies for 2010-11

Name	City	Province	CECR Centre
Accelyst	Waterloo	Ontario	OCE-CCR
Anoven	Waterloo	Ontario	OCE-CCR
Avenir Medical	Greater Toronto Area	Ontario	OCE-CCR
Burstn	Greater Toronto Area	Ontario	OCE-CCR
Ecoatra	Greater Toronto Area	Ontario	OCE-CCR
Eve Medical	Greater Toronto Area	Ontario	OCE-CCR
Fanfare Recruitment Services	Greater Toronto Area	Ontario	OCE-CCR
Multitap	Ottawa	Ontario	OCE-CCR
Pocket Pose	Kingston	Ontario	OCE-CCR
Redwoods Media	Waterloo	Ontario	OCE-CCR
Smart Eco Systems	Ottawa	Ontario	OCE-CCR
Triphase	Toronto	Ontario	MI
VitalHub	Toronto	Ontario	MI
Bedside Clinic Systems (BCS)	Toronto	Ontario	MI
Xagenic	Toronto	Ontario	MI
Switchable Solutions Inc	Kingston	Ontario	GCC
Precision Nanosystems Inc.	Vancouver	BC	CDRD

CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH (CECR)
CENTRE EXPENDITURES BY PROVINCE



Fiscal Year: 2010

Province	Expenditures		
	CECR Funds	Matching Funds	Total
BC	$14,259,946	$9,976,710	$24,236,656
AB	$790,667	$3,648,901	$4,439,568
SK	$1,790,237	$1,569,524	$3,359,761
ON	$24,246,616	$51,888,333	$76,134,949
QC	$8,667,992	$5,314,173	$13,982,165
NFL	$28,983	$235,339	$264,322
Total	**$49,784,441**	**$72,632,980**	**$122,417,421**

Notes:

1. Expenditures = Eligible expenditures for the CECR program as specified in the Tri-Agency Financial Administration Guide and the CECR Program Guide
2. Matching Funds = Funding from non-federal sources that is spent on eligible expenditures according to the CECR Program Guide

CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH (CECR)
IMPACTS ON ORGANIZATIONS SERVED BY CENTRES

Organizations that receive direct investment or support from the Centre of Excellence for Commercialization and Research

2010-11 Fiscal Year

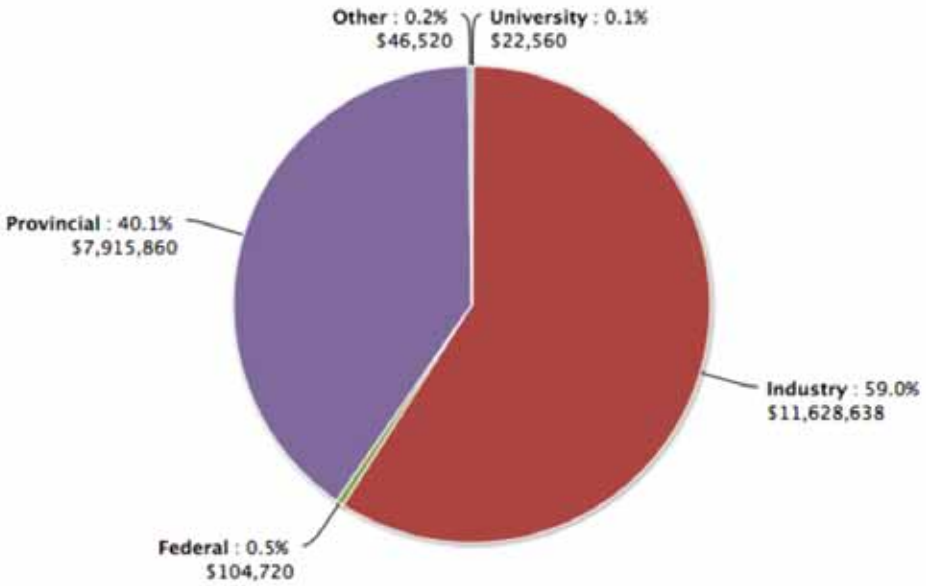
# of Jobs Created	# of Patent applications filed	# of Patent Issued	# of Licences under negotiation	# of Licences granted to industry	# of Copyrights	Number of Organizations Served
1186	151	62	82	28	7	230

Amount of additional investments accessed(CAD)	Amount of foreign investment received (CAD)	Revenue Generated
$103,726,699	$206,144,618	$19,943,809

5 Companies served reported 100% increase in exports
1 Company served reported 75% increase in exports
2 Companies served reported 50% increase in exports
2 Companies served reported under 50% increase in exports

Note: Organizations Served By Centres = Organizations that receive direct investment or support from the Centre of Excellence for Commercialization and Research

BUSINESS-LED NETWORKS OF CENTRES OF EXCELLENCE (BL-NCE)
PARTNER CONTRIBUTIONS



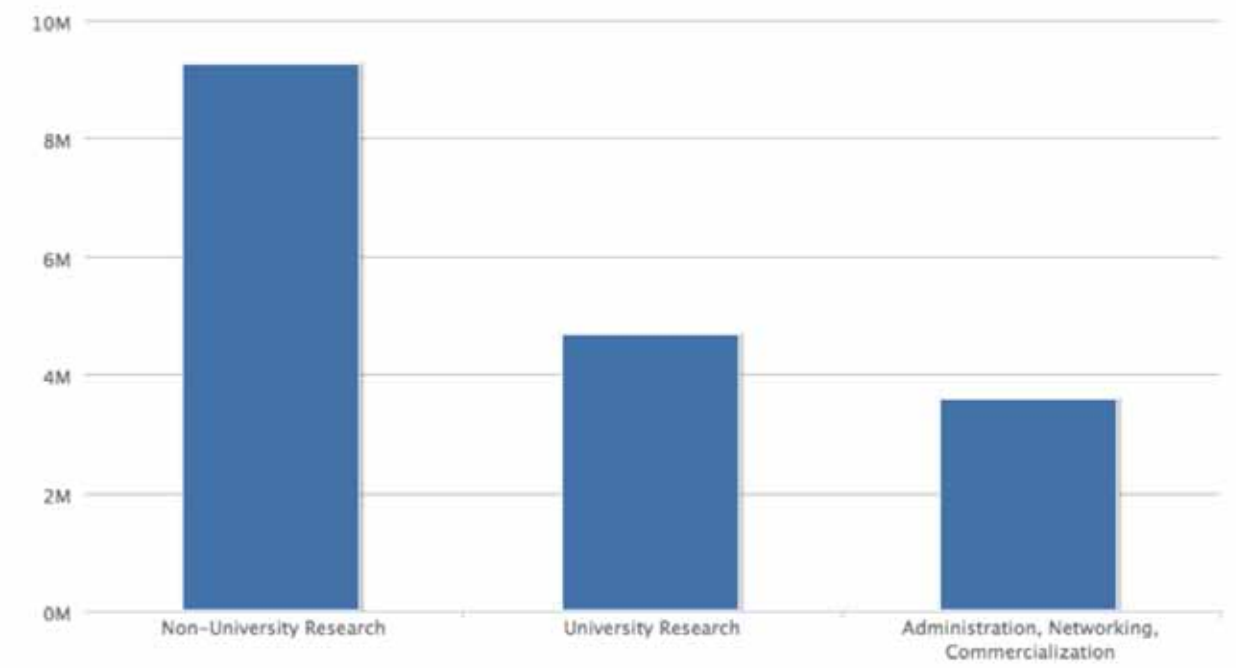
Source	Cash	In-Kind	Total
BL-NCE	$11,134,750		$11,134,750
Partners			
University	$0	$22,560	$22,560
Industry	$4,514,875	$7,113,763	$11,628,638
Federal	$100,000	$4,720	$104,720
Provincial	$7,412,645	$503,215	$7,915,860
Other	$37,000	$9,520	$46,520
Partner's Total	**$12,064,520**	**$7,653,778**	**$19,718,298**
Grand Total	**$23,199,270**	**$7,653,778**	**$30,853,048**

Partner Contributions = Eligible contributions to the BL-NCE program as specified in the Tri-Agency Financial Administration Guide and the BL-NCE Program Guide

BUSINESS-LED NETWORKS OF CENTRES OF EXCELLENCE (BL-NCE)
PUBLICATIONS AND SPECIALIZED TRAINING OPPORTUNITIES

Contributions	Number
Refereed Contributions	12
Non-refereed contributions	10
Specialized Publications	5
Total All Publications	**27**
Number of specialized training opportunities created	42

BUSINESS-LED NETWORKS OF CENTRES OF EXCELLENCE (BL-NCE)
UNIVERSITY AND PRIVATE SECTOR EXPENDITURES



	Expenditures Using BL-NCE Funds	Expenditures Using Matching Funds	Total Expenditures
Non-University Research	$1,686,091	$7,577,149	$9,263,240
University Research	$1,807,026	$2,868,920	$4,675,946
Administration, Networking, Commercialization	$1,686,825	$1,896,271	$3,583,096
Total	**$5,179,942**	**$12,342,340**	**$17,522,282**

Notes:

1. Expenditures = Eligible expenditures for the BL-NCE program as specified in the Tri-Agency Financial Administration Guide and the BL-NCE Program Guide
2. Matching Funds = Funding from non-federal sources that is spent on eligible expenditures according to the BL-NCE Program Guide

BUSINESS-LED NETWORKS OF CENTRES OF EXCELLENCE (BL-NCE)
SUPPORTED RESEARCHERS AND HQP

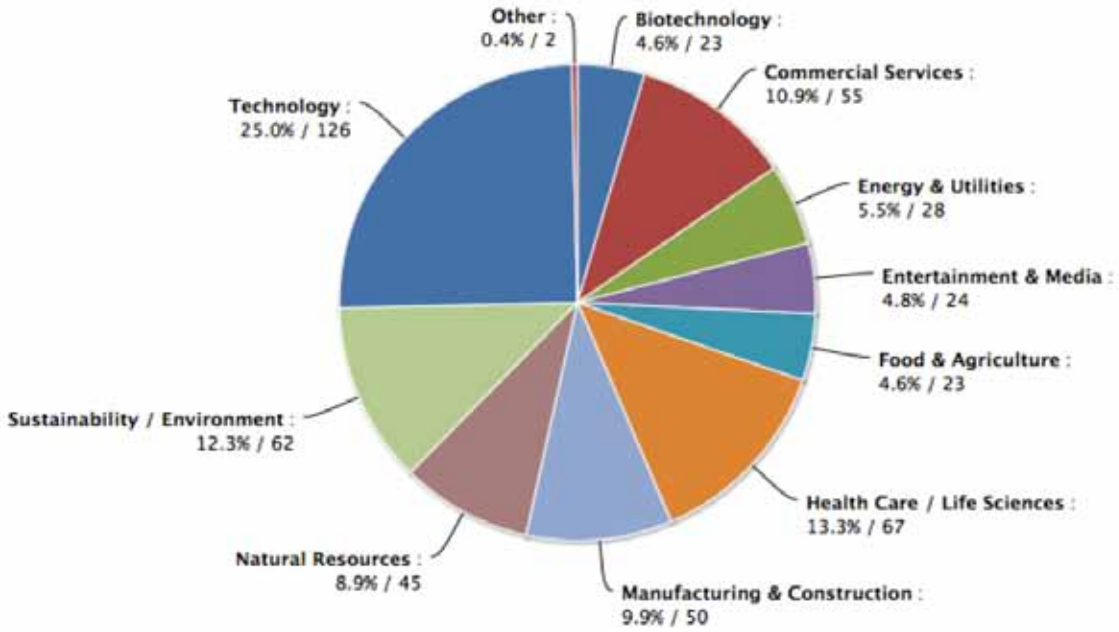
BL-NCE Researchers			Highly Qualified Personnel			
University	Non-University	Total Researchers	HQP supported by BL-NCE funds	HQP supported by non-BL-NCE funds	Total HQP	Total Personnel
30	54	84	87	19	106	**190**

* Highly Qualified Personnel refers to research staff such as research associates and technicians, and research trainees such as postdoctoral fellows, graduate students and summer students

INDUSTRIAL R&D INTERNSHIP PROGRAM (IRDI)
OVERVIEW

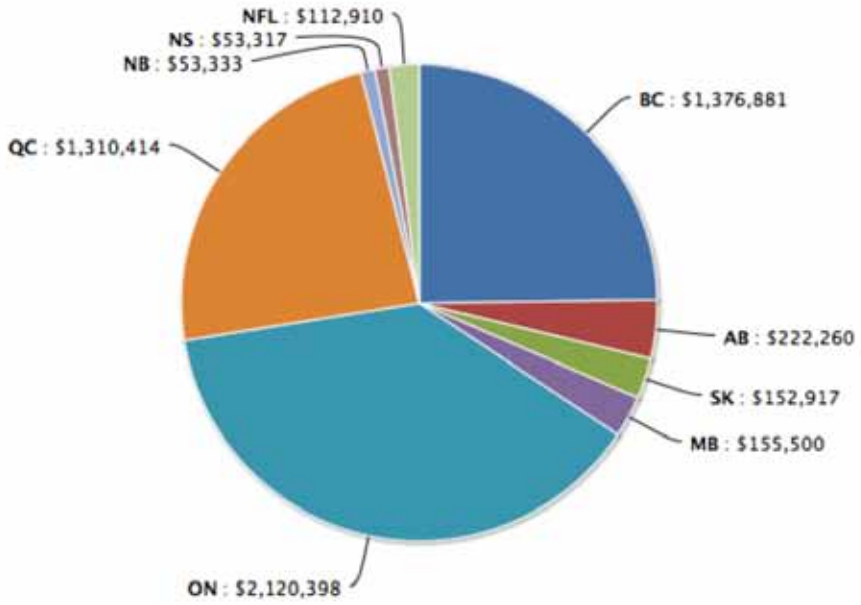
Grant	$6,880,000
Number of Internships	974
Number of Interns	889
Number of Companies	505
Number of Universities	46

INDUSTRIAL R&D INTERNSHIP PROGRAM (IRDI)
COMPANIES BY SECTOR



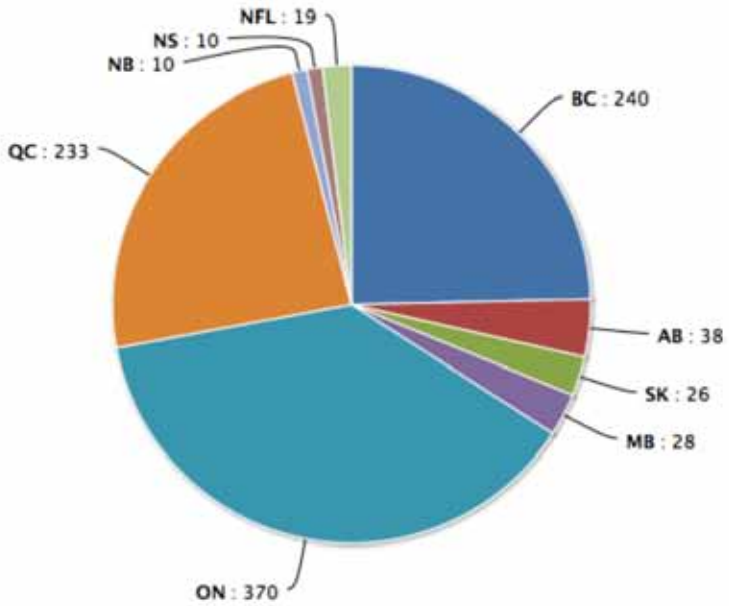
Sector	Total
Biotechnology	23
Commercial Services	55
Energy & Utilities	28
Entertainment & Media	24
Food & Agriculture	23
Health Care / Life Sciences	67
Manufacturing & Construction	50
Natural Resources	45
Sustainability / Environment	62
Technology	126
Other	2
Total	**505**

INDUSTRIAL R&D INTERNSHIP PROGRAM (IRDI)
EXPENDITURES BY PROVINCE



Province	Total
BC	$1,376,881
AB	$222,260
SK	$152,917
MB	$155,500
ON	$2,120,398
QC	$1,310,414
NB	$53,333
NS	$53,317
NFL	$112,910
Grand Total	**$5,557,930**

INDUSTRIAL R&D INTERNSHIP PROGRAM (IRDI)
INTERNSHIPS BY PROVINCE



Province	Internships
BC	240
AB	38
SK	26
MB	28
ON	370
QC	233
NB	10
NS	10
NFL	19
Total	**974**

SUCCESS IN ACTION

CREATING NEW INVESTMENT BUSINESS MODELS

COMPANY: ADDÉNERGIE TECHNOLOGIES INC., QUÉBEC CITY
FOUNDED: 2008
OF EMPLOYEES: 7

The Opportunity:

AddÉnergie developed an electric vehicle and plug-in hybrid charging stations designed to operate safely and easily in all climates. The arrival of these products coincides with the Quebec government's ambitious plan to make electric ground transportation more widely available over the next decade.

Louis Tremblay

THE CHALLENGE:

AddÉnergie had a proven technology, but faced challenges in raising additional capital for marketing and sales development. Securing venture capital has become increasingly difficult for start-ups and emerging technology companies in Canada.

HOW A CECR HELPED:

The Centre of Excellence in Energy Efficiency (C3E) invested $348,150 in AddÉnergie through its pre-seed fund. That funding—part of a $2 million round of financing—enabled the company to begin marketing its "smart" charging stations for electric and plug-in hybrid vehicles. It also leveraged C3E's investment to raise more than $5 million in round A financing, which it will use to scale up Canadian sales and to bring its DC fast-charging stations to market in 2012. Look for its stations soon in Québec City and Montreal. The first 60 units will be installed by November; 10 of which are part of a new contract with Communauto, the largest electric vehicle car-sharing project in North America.

ENTREPRENEUR:

Louis Tremblay, President, AddÉnergie Technologies Inc., Québec City

"C3E's investment in 2010 came at the right time for AddÉnergie, as seed money was—and still is—scarce in Quebec. The C3E funding allowed the company to make its first sales and establish its sales and distribution structure. The Centre fills the gap that has existed for too long in Quebec between R&D and the actual start of sales and will allow up-and-coming Canadian corporations in the energy industry to position themselves in the market."

Financial support for small firms:

One of the biggest challenges for early stage technology companies is a lack of access to pre-seed funds and venture capital to sustain and grow their operations. Several CECRs have pooled public funds with private funds to produce a comprehensive suite of funding programs for projects and companies at different stages of development. Funding applications are subject to rigorous review, in most cases by a panel that includes representatives from the CECR, industry and other receptor communities who may receive first rights to any technology developed.

GREENING CANADA'S AIRCRAFTS TO COMPETE GLOBALLY

SECTOR: CANADIAN AEROSPACE INDUSTRY
ANNUAL REVENUE: $23.6 BILLION (2008)
OF COMPANIES: 400+
OF EMPLOYEES: 80,000+


Photo: Bombardier


Fassi Kafyeke

The Opportunity:

Europe and other countries are adopting tough rules for minimizing the environmental impact of the aerospace (or aviation) industry. Companies that can manufacture planes that are less noisy, weigh less and consume less fuel will be able to compete. Companies that don't likely won't survive.

THE CHALLENGE:

Canada's aerospace industry, in partnership with Industry Canada and the National Research Council, produced a roadmap in 2008 to tackle this challenge. The Aerospace Environmental Technologies Roadmap highlights the research and technology investments Canada needs to make to remain competitive. Companies have been taking action individually, but there was little in terms of a national program that brought all players together in a coordinated way.

HOW AN BL-NCE IS HELPING:

A national consortium of 25 public and private sector partners, including original equipment manufacturers and small- and medium-sized companies, founded the Green Aviation Research and Development Network, which is helping industry take promising research to the development, testing and prototype stages. The creation of the GARDN was considered critical to executing the technologies roadmap.

INDUSTRY PARTNER:

Fassi Kafyeke, Director of Strategic Technology, Bombardier, Member, GARDN Executive Committee

"At Bombardier, we regard sustainable development as a responsibility and an opportunity. By designing aircraft that are more respectful of the environment, we are at the same time enhancing their operating performance and their cost, for the benefit of all customers and for the people who travel aboard our planes. We are thus very active in GARDN, which we regard as indispensable to our future."

Industry-leading research:

Founded by Bombardier, Pratt & Whitney Canada and CMC Electronics, GARDN is targeting the "valley of death in the innovation supply chain", which includes prototype, testing and demonstration of industrial research conducted by industries, universities and research institutes. The Network funds the development of technologies that will reduce the environmental impact of the next generation of aircraft, engines and systems that will enter into service in 2015-2025.

EXPORTING CANADIAN KNOWLEDGE TO EMERGING ECONOMIES

START-UP: CLEVRU CORPORATION, WATERLOO, ONTARIO
FOUNDED: 2010
OF EMPLOYEES: 10

The Opportunity:

The number of youth in emerging countries like China, India, Brazil, Mexico and Indonesia is exploding. The demand for higher education has never been greater. Their governments are asking for help—in terms of infrastructure and expertise—to deliver higher quality education. It represents a huge opportunity for a Waterloo start-up with an intelligent, adaptive, e-teaching, mobile platform—dubbed the "Facebook of Education" by early adopters. This cloud computing technology creates intelligence for the mobile user, providing relevant and timely multi-cultural information for students to access their education anywhere, using any device.

THE CHALLENGE:

Dana Fox had an idea for cost-effectively exporting Canadian knowledge to markets thirsty for high-quality, standardized education. But he wasn't sure how to build out the technology. He also needed assistance with all the legal, sales, marketing, accounting and other issues that go along with launching a new company with a global product.

HOW A CECR HELPED:

A chance conversation at a Canadian Digital Media Network-organized Canada 3.0 conference in May 2010 put Dana Fox and David Murdoch, senior vice-president together with a software programmer who was working on similar technology. By October, they had a working prototype, a new company, a provisional patent and a single desk at The Communitech Hub in Kitchener—one of nine centres across Canada that make up the CDMN. After completing incubation at the hub in April 2011, ClevrU had 10 employees, MOU's in Canada and an agreement with China Mobile, the world's largest carrier, to pilot English as a second language lessons and open-class content from Ivey League North America universities with more than one million students in fall 2011. The company is now in talks with all three Chinese telecommunications carriers with over 700 million subscribers as well as one of the largest data center manufacturers in the world.

START-UP ENTREPRENEUR:

Dana Fox, President and CEO of ClevrU Corporation

"Growing a company is like a barn-raising. You can't do it alone. Through Communitech and CDMN, you have about 300 people on your team, providing advice on everything from sales, finance, technology, accounting, marketing, advertising and legal. When you're bootstrapping a company with nothing but a credit card, you simply can't afford the access to this level of expertise. As a result, we were able to attract very high quality angel investors out of the gate and advisory board members from Research In Motion, Open Text and Wilfrid Laurier University. We're anticipating incredible growth for years to come."

"We're anticipating incredible growth for years to come."

Canadian Digital Media Network:

The Canadian Digital Media Network (CDMN) is comprised of eight acceleration centres, commercialization hubs and development centres across Canada. Services include physical space, programs, tools, technology and applications, financing and connectivity. CDMN also offers mentoring and advice on a range of topics, including intellectual property, marketing and strategy. CDMN's support of more than 200 early stage companies has translated into more than 350 new jobs and more than $17 million in new financing.

(From left) Dana Fox President/CEO and David Murdoch, Senior VP, ClevrU

IMPROVING PATIENT CARE AND HOSPITAL REVENUES

START-UP: VITALHUB CORP. TORONTO
FOUNDED: 2010
OF EMPLOYEES: 8

The Opportunity:

The information technology group at Mount Sinai Hospital developed a software solution that increases the amount of time medical staff can spend with patients, while creating a potential new revenue source for the hospital. That solution, called VitalHub, gives doctors, nurses and administrators easy, instant and secure access to virtually all hospital databases, including patient records, test results, vital statistics and medical literature—all from their smart phone or tablet. At a time when hospitals everywhere are trying to improve patient care, reduce costs and generate new revenue sources, VitalHub represents a significant new global market opportunity.

THE CHALLENGE:

Mount Sinai launched a spin-off company (VitalHub Corp.) to commercialize the technology but was hindered by a lack of venture capital funding and commercialization expertise.

HOW A CECR HELPED:

MaRS Innovation's $300,000 investment in VitalHub is enabling the company to move from a pilot trial to a full-scale roll out of products used at Mount Sinai Hospital, that will increase the amount of data that can aggregated and more easily integrated into other hospital informatics systems. The Mount Sinai spin-off has now raised $1 million in financing and plans to hire another 10 people over the coming months. The company has preliminary agreements to roll out its solution at three other Canadian hospitals and are in talks with several U.S. providers.

Jim Woodgett, Director of Research, Samuel Lunenfeld Research Institute

COMMERCIALIZATION PARTNER:

Jim Woodgett, Director of Research, Samuel Lunenfeld Research Institute at Mount Sinai Hospital

"This is a great example of how MaRS Innovation works with member research institutes and hospitals to add value to their discoveries and products, construct the deal, and bring together the people who may be interested in the technology. MaRS is an accelerant—it provides the initial fuel to get things moving quickly."

MaRS Innovation:

MI is the commercialization agent for 16 Toronto academic and medical research institutions. The Centre provides funding and resources to qualify and advance technologies, file patents, develop business and marketing plans and secure investments. It has spun off seven companies to date and brokered four licensing agreements, including an exclusive, worldwide option between Sanofi-Aventis and Sunnybrook Health Sciences Centre to develop and commercialize a new compound to treat chronic wounds. Reporting on the deal in a March 16, 2011 article, Globe and Mail reporter Lisa Priest noted that "Until recently, some hospitals were reticent to capitalize on their discoveries, seeing commercialization as unsavory, but now many believe it's one of the quickest ways to get a drug to their patients...This deal will be watched closely by hospital presidents, who are seeking novel ways to generate revenue far beyond mundane methods of parking lot fees and food kiosks."

Vitalhub

LEVERAGING CANADA'S INVESTMENT IN BIG SCIENCE FACILITIES

The Opportunity:

Maximizing Canada's $45 million annual investment in TRIUMF, Canada's national laboratory for nuclear and particle physics, to assist diverse industry sectors.

THE CHALLENGE:

TRIUMF researchers developed a more precise, less expensive and more environmentally sustainable method to uncover mineral ore deposits, using an underground sensor system—called muon geotomography—to take three-dimensional images deep within the earth. But the system was early stage and needed field testing, industry involvement and business support to become a commercial product.

HOW A CECR IS HELPING:

Advanced Applied Physics Solutions (AAPS), the commercialization partner of TRIUMF, brought together a multi-sector collaboration of university partners, the Geological Survey of Canada, BC Industry of Mines and a Canadian mining company to conduct proof-of-principle tests on the system. Initial tests on Vancouver Island, in partnership with Nyrstar Myra Falls (formerly NVI-Breakwater), demonstrated that muon tomography can successfully identify ore bodies underground. AAPS plans to launch a spin-off company to commercialize the technology.

(Left to right) David Keiver, Human Resources Superintendent, Nyrstar Myra Falls; Dr. Douglas A. Bryman, UBC; The Honourable Lynne Yelich and John (Jack) Scott, former President and CEO, AAPS.

WED invests in AAPS: Western Economic Diversification was so encouraged with the initial test results that it decided to invest $1.8 million to further develop and field test specialized equipment needed to demonstrate and help industry adopt muon geotomography.

INDUSTRY PARTNER:

Rick Sawyer, P.Geo. (BC), Chief Geologist, Nyrstar Myra Falls.

"Mineral exploration and mine development is an expensive and time-consuming process and anything that makes it easier and less costly is more than welcome by the industry. Also, because this technology has the potential to detect and image deposits at depth, it will refine the exploration search area which will reduce the amount of drilling required and further efforts to minimize environmental impact."

Getting a bigger bang out of big science:

The NCE creates opportunities for researchers from across Canada to access national science facilities. ArcticNet brings together multi-disciplinary researchers from some 30 universities to conduct field work each year aboard the CCGS Amundsen, a state-of-the art research icebreaker that was funded by the Canada Foundation for Innovation (CFI) ($25 million) and Fisheries and Oceans Canada ($3 million). The Ocean Networks Canada Centre for Enterprise and Engagement (ONCCEE) CECR is creating commercialization and education opportunities from the world-leading ocean observing facilities of VENUS and NEPTUNE Canada, which received $72.4 million in infrastructure funds from CFI and the British Columbia Knowledge Development Fund.

LINKING SMALL FIRMS WITH PARTNERS AND INVESTORS

START-UP: REWARDLOOP, VANCOUVER
FOUNDED: 2010
OF EMPLOYEES: 5

The Opportunity:

Two entrepreneurs with a solid track record in starting and building companies have developed a mobile technology that enables merchants of any size to simply and cost-effectively print secure, QR code-based loyalty transaction identifiers on bills and receipts. Customers can then scan these identifiers with their smartphones to earn and redeem loyalty rewards without carrying a wallet full of cards and stamps. The technology can measurably increase revenue 5 percent or more for independent and chain merchants.

THE CHALLENGE:

Going it alone as a start-up is tough, even for experienced entrepreneurs with a promising technology. For the founders of RewardLoop, they needed help to test and validate their products and in making connections for investment and distribution deals.

HOW A CECR HELPED:

Wavefront facilitated introductions to potential investors and partners. The Wavefront Accelerator Centre provided a collaborative and supportive environment to validate marketing concepts and product functionality utilizing Wavefront's handset library and peer network. The result? RewardLoop secured seed funding that allowed them to hire three employees with plans to hire another six to ten by the end of the year. RewardLoop was also able to secure pilot orders with major, national restaurant and retail chains and secure international distribution deals for its RewardLoop Connect devices that begin shipping in the last quarter of 2010-11.

Photo credit: BCTIA & Kim Stallknecht Photography

Bill Tam (right), president and CEO of the BC Technology Industry Association, presents Nigel Malkin with the "Most Promising Startup" at its 2011 Technology Impact awards.

START-UP ENTREPRENEUR:

Nigel Malkin, CEO and Co-Founder, RewardLoop

"There can be no underestimating how much one's surroundings contribute to productivity and morale, and the Wavefront Accelerator Centre scores an A+. The physical environment is polished, yet casual and comfortable; it is a place where you enjoy coming to work every day. The testing services available through Wavefront are the perfect complement to the Centre's collaborative peer network environment. As a result, we were able to fine tune our design and products and leverage Wavefront's market linkages, which opened doors to seed funding, clients and distribution partners. For a wireless start-up, there is no better place from which to launch."

Growing start-ups:

In addition to providing funding support for technology development, some centres also offer commercialization services such as mentoring, entrepreneurship training, executives-in-residence and linkages with potential partners, customers and investors.

"For Malkin and RewardLoop co-founder Jeff LaPorte, the Entrepreneurship@ Wavefront program provided the catalyst they needed to quit their day jobs and take their wireless idea from a concept to a product ready for market. During its stay at Wavefront, RewardLoop launched a pilot, raised a seed round of funding and hired three new employees."

Vancouver Sun, "Vancouver startup engineers a high-tech twist on loyalty cards", August 19, 2011

PLANNING NOW FOR A SUSTAINABLE AND PROSPEROUS ARCTIC

The Opportunity:

Offshore oil and gas exploration in the Arctic is at the top of the political agendas of Canada and other northern nations. A 2008 study by the U.S. Geological Survey found that the Arctic holds up to 22 percent of world's untapped energy reserves, including an estimated 90 billion barrels of undiscovered oil and about 1,670 trillion cubic feet of natural gas.

THE CHALLENGE:

The Government of Canada needs a large volume of scientific and socio-economic data to develop efficient and effective regulations to prepare for safe and sustainable oil and gas activity in this remote and environmentally sensitive region.

HOW AN NCE IS HELPING:

ArcticNet is an important contributor to the government's $22million Beaufort Regional Environmental Assessment (BREA)—a multi-stakeholder initiative that will allow for more informed environmental assessments and regulatory processes. In 2010, Aboriginal Affairs and Northern Development Canada enlisted ArcticNet to review and document the large amount of data collected in the Beaufort Sea environment primarily through ArcticNet and other major academic-lead international research programs over the last decade. Released in March 2011, the data mining report will benefit regulators, government departments, Inuvialuit institutions and industry. ArcticNet researchers aboard the Canadian research icebreaker CCGS Amundsen will also lead four BREA research projects beginning in 2011.

A Leader in Collaborative Research:

ArcticNet has become one of the most successful federally funded research consortiums. Its members—including over 145 Arctic researchers from across Canada and other countries, as well as northern communities and research institutes—have been working together since 2003 to study climate change and adaptation, community health, and a host of other issues crucial to the coastal areas of Canada's Arctic.

PUBLIC-PRIVATE PARTNERSHIP DELIVERS GREEN SOLUTIONS

START-UP: SWITCHABLE SOLUTIONS INC., MISSISSAUGA, ONTARIO
FOUNDED: 2011
OF EMPLOYEES: 6

The Opportunity:

A Queen's University researcher discovered a breakthrough eco-solvent technology that takes aim at some of the world's most pervasive environmental challenges. The green business opportunities are significant: recycling polystyrene foam packaging and food containers and polyethylene oil bottles, separating oils in soybeans and other sources to make biofuels, and extracting bitumen from oil sands.

THE CHALLENGE:

Translating this technology into a company with a viable commercial product.

HOW A CECR HELPED:

GreenCentre Canada extensively developed and tested the technology over the past two years, reducing the risk for future investors. GreenCentre then teamed with Stewardship Ontario and two of its industry sponsors (Fielding Chemical Technologies, Mississauga and NexCycle Plastics Canada, Brampton) to create Switchable Solutions to commercialize the technology. The company is initially targeting three market sectors: plastics recycling, oil sands processing and seed oil extraction. Its first plastics recycling plant, currently under construction in Mississauga, will divert about two million kilograms per year of foam cushion packaging, soiled food containers and other used plastic from Ontario landfills. Four other plants are planned for Ontario and the United States.

Photo credit: Rob Beintema, Mississauga News

Ontario's Minister of Government Services and MPP for Mississauga-Erindale, Harinder Takhar (second from left) recently toured the Fielding Chemical property that will house Switchable Solutions' new plastics recycling area.

START-UP ENTREPRENEUR:

Mark Badger, President and CEO, Switchable Solutions

"Having GreenCentre Canada's industry sponsors as our founders provides us with a solid foundation of expertise and resources to quickly deliver significant economic and environmental benefits. We're currently in discussions with other potential strategic partners to rapidly grow the company."

The value of partnerships:

GreenCentre's 10,000 sq. ft. laboratory, funded by the Ontario government and private sector, is able to offer a suite of commercialization services as a result of its CECR funding. The Centre is actively commercializing 25 technologies, from a portfolio of 280 from 37 institutions. GreenCentre is also working with another CECR, the Bioindustrial Innovation Centre, to create a development pipeline that takes projects from the lab bench to pilot scale testing.

RE-BUILDING GLOBAL MARKETS FOR CANADIAN BEEF

The opportunity:

Through the PrioNet Canada NCE, Canada has emerged as a global centre of research excellence in prion diseases, including bovine spongiform encephalopathy (BSE). PrioNet is leveraging this expertise to build new international partnerships, inform public policy and help re-establish global markets for Canadian beef. The discovery of a domestic case of BSE in Alberta in 2003 resulted in worldwide closing of Canada's beef and related industries. The economic loss stemming from this discovery is estimated at over $6 billion.

THE CHALLENGE:

Rebuilding relationships with international trading partners takes trust, time and funding. Scientific exchanges provide an excellent opportunity for building these relationships.

HOW AN NCE IS HELPING:

Thanks to the NCE's International Partnership Initiative, PrioNet has established dozens of partnerships with research organizations from around the world and held valuable knowledge exchanges with several countries, including China, the United States, Mexico, Spain, Scotland and Austria. In November 2010, PrioNet partnered with scientific networks and government agencies in Japan, and the Alberta Prion Research Institute and Alberta Meat and Livestock Association to present the first Canada-Japan scientific exchange on prion diseases. The two-day workshop in Tokyo drew over one hundred attendees, including dozens of Japanese policy-makers and government officials. At the workshop, the Japanese shared a wealth of data generated from the "Farm to Fork" tracking system that their country established following their first case of BSE in 2001. Canada does not currently employ such a system, but PrioNet researcher Dr. Ellen Goddard's work from the University of Alberta has illustrated how such tracking systems here in Canada could lead to greater demand for Canadian beef products in Japan and other markets.

Photo: PrioNet-Japan workshop

Meeting participants: (from left) Dr. Avi Chakrabartty (University of Toronto), Dr. David Westaway (University of Alberta) and Dr. Takashi Yokoyama (Prion Disease Research Center, Japan)

INDUSTRY PARTNER:

Ted Bilyea, Board Member of PrioNet and the Alberta Livestock and Meat Agency; former Executive Vice-President, Maple Leaf Foods

"This meeting was a terrific opportunity to build personal relationships and trust with Japanese scientists. Trust and transparency is the foundation that leads to open scientific dialogue, and fosters connections with key international trading partners for Canadian beef products."

Ted Bilyea

International Partners to the NCE Program: 2010-11

	University	Company/ Industry	Hospital	Federal	Provincial	Other	Total
International	150	137	10	16	2	127	442

SHARING ENTREPREUNIAL EXPERTISE WITH SMALL FIRMS

SMALL COMPANY: REGEN ENERGY INC., TORONTO
FOUNDED: 2005
OF EMPLOYEES: 14

The Opportunity:

REGEN had a hot technology with a ready market. Its lead product, the EnviroGrid Controller, allows air conditioners and other electrical loads in a building to "talk" to each other wirelessly. Using REGEN's patented swarm logic, controllers optimize how many loads operate at once, which reduces peak demand while maintaining occupant comfort. This conversation dramatically reduces utility bills by 10-20 percent annually for industrial factories and commercial facilities.

THE CHALLENGE:

Raising the capital needed to grow the company and take EnviroGrid to market.

HOW A CECR HELPED:

The Ontario Centre of Excellence's (OCE) Centre for Commercialization of Research (CCR) connected REGEN with a new CEO, Tim Angus, through its Embedded Executive program. Angus has a proven track record of leveraging private and public equity markets for growth stage companies. CCR also participated in the equity financing round, investing additional funds in REGEN and, through its participation, helped to attract other investors. The company recently received $5.5 million in venture capital from industry players, and expects to create 15-30 new jobs in Ontario over the next three years.

Tim Angus, CEO of REGEN Energy (left), discusses the installation of its EnviroGrid controllers at GE's Digital Energy headquarters in Markham, Ontario, with Greg Fitzgerald, Regional Commercialization Director, Central Ontario, Centre for Commercialization of Research.

EXECUTIVE IN RESIDENCE:

Tim Angus, CEO, REGEN Energy

"OCE's CCR is an ideal support partner for a company at REGEN's stage. CCR's financial support helped REGEN by providing essential funding at a critical time to execute key corporate development initiatives and it has been highly creative and flexible in structuring investment for the company. The team at OCE and CCR possesses tremendous depth and experience which has proven invaluable to our company."

Acceleration services:

The Centre for Commercialization of Research offers a broad range of services including: advisory and resource services; embedded executives, access to capital, assistance for new entrepreneurs and connections to national and global networks.

CCR Impacts to Date

- 83 micro-loans in 72 companies (average investment: $50,000)
- $92.9 million in follow-on investments
- 941 new jobs
- 39 new entrepreneurs
- $25.2 million in incremental sales revenue
- 43 percent of companies already generating revenue

SCIENCE GIVES SMALL COMPANIES A COMPETITIVE EDGE

START-UP: SIDESTIX VENTURES INC., ROBERTS CREEK, BRITISH COLUMBIA.
FOUNDED: 2004
OF EMPLOYEES: 4

The Opportunity:

Sarah Doherty—entrepreneur, athlete, occupational therapist and amputee—and SideStix co-founder and engineer Kerith Perreur-Lloyd revolutionized the common walking crutch for the disabled, developing an ergonomic, shock-absorbing forearm crutch that significantly reduces joint compression and the secondary injuries that often arise from using crutches. The crutches also come with interchangeable tips to help users navigate all terrain, including snow, sand, ice and mud.

THE CHALLENGE:

Sarah and Kerith were confident they had designed the world's best high-performance forearm crutch. But it's not enough for a company to know it has the best product. Savvy consumers want scientific proof that a product lives up to its claims. Coming up with evidence-based design improvements can also be difficult for small companies that lack the scientific and engineering resources available in universities or larger companies.

HOW AN IRDI INTERN HELPED:

Mitacs-Accelerate intern Megan MacGillivray, a Ph.D. student from the University of British Columbia, and her supervisor Dr. Bonita Sawatzky, are evaluating the biomechanical differences between SideStix crutches and traditional forearm crutches. SideStix is already using preliminary research results to make product design improvements to aid walking and reduce overuse injuries. As a small company, SideStix was able to afford the internship through cost-sharing with Mitacs-Accelerate and the Industrial Research Assistance Program.

START-UP ENTREPRENEUR:

Sarah Doherty, Co-Founder, SideStix Ventures

"Being able to demonstrate to our consumers—with empirical data from an objective and credible source—that our crutches reduce overuse injuries gives us a real advantage over our competitors. That's because there has been minimal to no research to date on forearm crutches, which is why too many people are making due with very primitive, non-ergonomic designs. Because of Megan's work, we are able to show how a joint impact can be measured. Megan also provided some valuable information on ISO designations, which will help to open up new markets for us in Europe and the United Kingdom."

How companies benefit from internships:

Some firms use Industrial Research and Development Internships as a test project before embarking on a larger research project. Others use it to achieve short-term, proof-of-concept development goals or as an effective technology transfer mechanism as part of a larger collaborative strategy. Some companies use the program to determine whether to create new R&D positions within their companies and try out potential future employees.

SideStix founders Sarah Doherty and Kerith Perreur-Lloyd had an opportunity to pitch their forearm crutch to a panel of Canadian business moguls on CBC's Dragon's Den television show. The segment is expected to air later in 2011.

Sidestix crutch

STIMULATING ECONOMIC DEVELOPMENT IN SMALL TOWN ONTARIO

COMPANY: BATAWA DEVELOPMENT CORPORATION, BATAWA, ONTARIO
HISTORY: HISTORIC SHOE FACTORY VILLAGE FOUNDED BY THOMAS BATA IN 1939 ON THE TRENTON RIVER NEAR TRENTON, ONTARIO.
REGIONAL POPULATION: 155,000

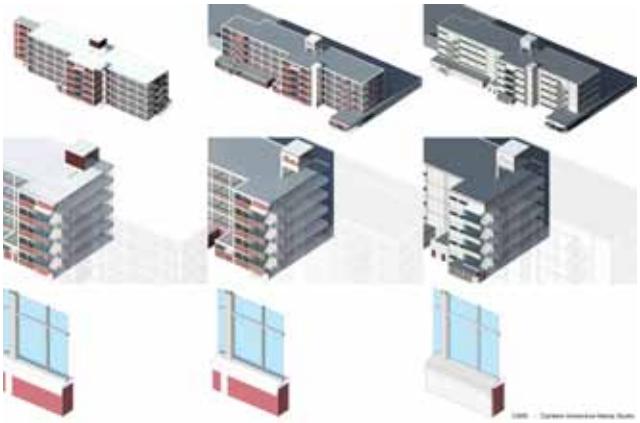
The Opportunity:

To come up with an innovative building information model that could support the re-development of a former shoe factory and 648 hectares of land that will attract jobs, new home buyers and economic development to a region that has been hit hard by unemployment.

The Challenge:
Batawa Development Corporation (BDC) developed a sustainable community redevelopment plan to build 500 homes and a 40-hectare business park. But the company's chairperson, Sonja Bata, didn't want another cookie-cutter bedroom community. She wanted creative ideas for building a model village that demonstrated excellence in design as well as environmentally and economically sustainability and social responsibility.

HOW A GROUP OF IRDI INTERNS ARE HELPING:

Carleton University architecture professor Stephen Fai and graduate students Katie Graham, Todd Duckworth and Nevil Wood—funded through the Mitacs-Accelerate internship program—developed a 3D computer model that produces life-like simulations showing how this historic town looked in the past, what it looks like today, and what it could look like in the future. BDC will use this building information model as a planning and marketing tool to plan roads, infrastructure and construction, and to show potential clients what's available in the village and how their project fits into the community. The design could become a model for other small towns. Nevil recently presented the model, which he has described as "Google Earth on steroids," in Prague to the bi-annual meeting of the International Committee for Documentation of Cultural Heritage (a committee of the International Council on Monuments and Sites).



This image shows a building information model of the Batawa factory as originally constructed in 1939, as renovated in the 1960s, and again in the 1980s.

Image credit:
Todd Duckworth

LANDOWNER AND DEVELOPER:

Heather Candler, General Manager, Batawa Development Corporation
"Creating simulations like this are beyond our capability. We now have an incredible, multi-faceted tool at our fingertips that can be used to develop storm water and other servicing plans and stimulate community and economic development. It also provides us with an exceptional marketing tool that allows people to "walk" through the community and to envision what is possible. Now we can begin working with town planners, architects and designers to start attracting jobs and residents back to the community."

Demand for interns growing:

Batawa Development Corporation is one of several companies and organizations that are benefiting from Mitacs-Accelerate's new internship cluster model. Introduced in response to a frequent demand from industry partners, the model places three or more graduate students or post-doctoral fellows on a single research topic, which allows more in-depth, longer-term research projects. In 2010-11, 87 cluster projects were approved to support internships across the country. Industry partners contribute a minimum of $30,000.

Heather Candler, GM, Batawa Development Corporation

SUPPORTING ECONOMIC DEVELOPMENT IN FIRST NATION COMMUNITIES

The Opportunity:

The Great Bear Rainforest in British Columbia is a magnificent old growth forest ecosystem representing one-quarter of the world's remaining coastal temperate rainforest. First Nations communities in the Central Coast, North Coast and Haida Gwaii areas of the region are forming new partnerships to support sustainable economic development and conservation management.

THE CHALLENGE:

Finding partners with the necessary skill sets and resources who can support the work First Nations communities are doing to develop their economies, build their businesses and create jobs.

HOW A TEAM OF IRDI INTERNS HELPED:

Mitacs-Accelerate negotiated an innovative cost-shared pilot partnership with First Nations in the Great Bear Rainforest, through Coast Opportunity Funds and ISIS at the University of British Columbia Sauder School of Business. The partnership, which began in 2009, supported several projects in 2010-11 involving nine graduate student interns from ISIS, working with three First Nations communities. Projects included: a business case analysis for a community hydro facility with the Gitga'at First Nation; feasibility studies for Haida Enterprise Corporation (HaiCo); and feasibility studies for Heiltsuk Economic Development Corporation (HEDC). The latter studies, by interns Neil McGuigan, Adam McKechnie, Joanna Pedersen and Rachael Kitagawa, enabled HEDC to double its annual revenues, save $100,000 annually by relocating its freight company operations, create six new jobs at HEDC and raise over $1 million to refurbish the Bella Bella Fish Plant, which will create more than 100 new jobs.

(From left): A new pilot partnership begins with Coast Funds and Mitacs-Accelerate: Alvina Duncan (HEDC Trustee), Neil Philcox (Coast Opportunity Funds), Connie Newman (HEDC Trustee), Marilyn Slett (Chief Councillor, Heiltsuk Tribal Council), Saphire Humchitt (HEDC Chair), Lois-Anne Arnold (HEDC Board Member) and Dave Mannix (CEO, Coast Opportunity Funds).

COMMUNITY PARTNER:

Saphire Humchitt, Chair, HEDC

"These partnerships are helping us to make our companies more profitable and to create job opportunities in the community. As a result of our work with ISIS and four interns, we are renovating our fish processing operations, which will generate 30 direct jobs and 30 indirect jobs in the short term. Within a year, we're expecting it will create another 60 to 100 jobs and begin generating half a million dollars or more each year in profit."

FUNDING PARTNER:

Neil Philcox, Director of Projects, Coast Opportunity Funds

"We were able to tap into the human resources, skills and financial resources Mitacs-Accelerate has to offer and link them up to these First Nations communities to support sustainable business and community-based employment opportunities. Based on the success of these initiatives Coast Funds began work in 2010 toward expanding the ISIS/Mitac model to an umbrella facility including a range of university partners and increased access for the First Nations to financial, human, institutional and knowledge-based resources for projects and capacity-building initiatives. This work is expected to be in place by mid-2011."

Industrial Research and Development Internships 2010-11

Annual Budget	$6,880,000
Number of Internships	974
Number of Interns	889
Number of Companies	505
Number of Universities	46

Expenditure by province

Province	Total
AB	$222,260.00
BC	$1,376,881.00
MB	$155,500.00
NB	$53,333.00
NL	$112,910.00
NS	$53,317.00
ON	$2,120,398.00
QC	$1,310,414.00
SK	$152,917.00
GRAND TOTAL	**$5,557,930.00**

UNIVERSITY EXPERTISE SUPPORTS CANADIAN MANUFACTURERS

COMPANY: ABBOTT POINT OF CARE, OTTAWA
FOUNDED: OTTAWA FACILITY WAS ESTABLISHED IN 1992
OF EMPLOYEES: 850+

The Opportunity:

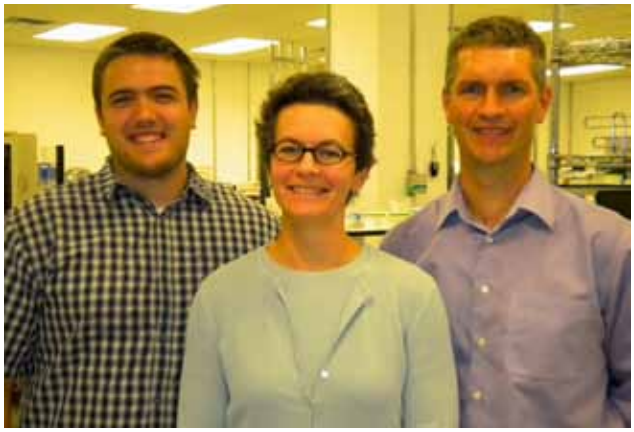
To improve the global competitiveness of a handheld blood-testing device by providing excellent scientific data that more accurately predicts the product's shelf life. Abbott Point of Care's (APOC) i-STAT System, manufactured at its 4.5 hectare facility in Ottawa, is used in hospitals worldwide to provide real-time results within minutes in critical care situations.

THE CHALLENGE:

Faced with both time and resource constraints, APOC's research and development department needed assistance in developing the mathematical models to describe the stability of the chemical and biological components in these assays. Such models are useful for supporting shelf-life claims and for designing faster testing protocols.

HOW AN NCE STUDENT HELPED:

APOC was awarded more than $15,000 through an NSERC-Mitacs Industrial Postgraduate Scholarship to support a chemical engineering master's student from Queen's University. Stephen Snyder developed mathematical models for predicting the stability of two test cartridges used for point-of-care blood analysis. The research results were published in a prestigious scientific journal and presented at three conferences in the United States and in Canada. Stephen joined APOC full time as an intermediate engineer in November 2010, and is now working on follow-up projects to improve some of the stability characteristics described by his earlier modeling work.



(From left) Stephen Snyder, Intermediate Engineer, Tamara McCaw, P.Eng, Staff Engineer, and Eric Brouwer, Ph.D., Senior Manager, Assay Research.

INDUSTRY RESEARCH COLLABORATOR:

Tamara McCaw, Staff Engineer, Abbott Point of Care, Ottawa

"This work has been beneficial to APOC for its relevance to product shelf-life predictions and the resulting improvements to our understanding of system behaviour. The company has also benefited by developing a relationship with Dr. Kim McAuley and Dr. James McLellan at Queen's University, who have been valuable resources for discussing applications of mathematical modeling to research challenges. A new master's student from their group will be starting in September 2011 on a new APOC collaborative project as part of the Mitacs-Accelerate internship program. That work is expected to further our understanding of a complex assay system and provide insight that will make physical experiments, investigations and improvements more efficient."

Training Tomorrow's Highly Skilled Workers:

The NCE plays a major role in training highly qualified personnel such as research associates and technicians, post-doctoral fellows and graduate students. Young researchers learn how to work in teams, often in collaboration with other research disciplines and receptor communities. Many students learn marketable skills by working directly on industry-focused projects.

COMMITTEES

STEERING COMMITTEE

Chair

Dr. Suzanne Fortier
President of the Natural Sciences and Engineering Research Council of Canada (NSERC)

Members

Dr. Alain Beaudet
President of the Canadian Institutes of Health Research (CIHR)

Richard Dicerni
Deputy Minister, Industry Canada

Dr. Chad Gaffield
President of the Social Sciences and Humanities Research Council of Canada (SSHRC)

Dr. Gilles Patry
(non-voting ex-officio member)
President and CEO, Canada Foundation for Innovation

Glenda Yeates
Deputy Minister, Health Canada

PRIVATE SECTOR ADVISORY BOARD

Chair

The Honourable Perrin Beatty
The Honourable Perrin Beatty is the President and CEO of the Canadian Chamber of Commerce. For five years, he was Co-Chair of the Canadian Labour and Business Centre. During his time in politics, he held a number of portfolios in Progressive Conservative governments, including Minister of State (Treasury Board), National Defense, Health and Welfare, and Solicitor General. He serves on a number of Canadian Government advisory committees. Previously, he was President and CEO of Canadian Manufacturers & Exporters as well as President and CEO of the CBC.

Members

Sue Abu-Hakima
Sue Abu-Hakima is co-Founder, President and CEO of Amika Mobile Corporation, her second start-up, and holds 19 international patents, with a 20th pending. She sits on the Board of Directors of the Ontario Centres of Excellence and is the Chair of the Board of Management for the Center of Excellence for Communications and Information Technology. In 2003, she contributed to the Prime Minister's Task Force on Women Entrepreneurs.

Cédric Bisson
Cédric Bisson is the partner in charge of life sciences and energy investments at iNovia Capital. Previously, Mr. Bisson was an associate principal at McKinsey & Company, where he co-led the Canadian healthcare and innovation practices. Mr. Bisson has been a board member to Iaculor Injection, Milestone Pharmaceuticals, Mimetogen Pharmaceuticals, Resonant Medical, and BIOQuebec.

Alan Burgess
Alan Burgess brings a strong engineering and business background to product development. He is Chief Executive Officer and Director of Northwest Mettech, the leader in the plasma spray coating industry. He founded Mettech and has been President since its inception, gaining experience in everything from sales and financing to applications engineering. Mr. Burgess is a Board Member of Nanotech BC and is Scholarship & Awards Chairman for the International Thermal Spray Association.

James E.C. Carter
James E.C. Carter (Jim), P. Eng. is a retired business executive who was with Syncrude Canada Ltd. for more than 27 years, including 10 as president. He played a key role in developing the untapped Alberta oil sands into an engine for securing Canada's energy future. Currently, he serves on the board of EPCOR Inc. and is a director and past chair of the Mining Association of Canada. In 2005, he was named Resource Person of the Year by the Alberta Chamber of Resources.

Patrick Champagne
Patrick Champagne has been Vice-President of CMC Electronics since 1998, working with its three sites in Quebec, Ontario, and the United States. He sits on the boards of the Consortium for Research and Innovation in Aerospace in Québec and Aéro Montréal, and previously, the Association de la recherche industrielle du Québec.

Adam Chowaniec
Adam Chowaniec is the Chairman of the Board of Directors of Tundra Semiconductor Corporation and Executive in Residence at Vengrowth Capital Partners Inc, as well as past Chair of the Information Technology Association of Canada Board of Directors. He has won awards for his leadership, business excellence, and innovation, including the Ottawa-Carleton Research Institute's prestigious Chairperson Award.

Pierre Delagrave
Pierre Delagrave is President of Cossette Media, and founded several business units within the organisation over the past 35 years. He is a founding director of Conseil des Directeurs Medias du Québec, and has sat on the boards of COMB, Nadbank, BBM Surveys, and Centre d'études des medias. He is also Vice Chairman of Columbus Media International.

Paul Dottori
Paul Dottori is Vice President, Energy, Environment and Technology for Tembec Enterprises, Inc., where he has worked for 20 years. He is a past Board Director of the Industrial Gas Users Association and continues his work with committees and industry associations focused on solutions within the electricity and energy sectors. Hi expertise includes extensive experience and knowledge in energy and environmental operations and management, as well as in Government and First Nations relations.

Robert A. Gordon
Robert A. Gordon is President and Chair of the Corporation of Bishop's University. He is a past President of the Association of Canadian and Community Colleges and chaired the Ontario Technology Fund for the Premier's Council of Ontario. He has forty years of experience in the public education sector, including as president of Dawson and Humber colleges.

Raymond Leduc
Raymond Leduc is the Director of IBM's Bromont plant, the company's largest semiconductor assembly and test site. He joined IBM in 1981, and has held various management positions at the site over the years. He oversees the production of components for all of IBM's leading products, including Nintendo Wii, Microsoft's Xbox, and Sony's Playstation 3, at this site.

Donald Lush
Donald Lush is President of Environmental Bio-detection Products Inc and Chairman of the Board of Microbial Insights. Working in technical, management and advisory roles, including as founder, president, and chairman of a number of environmental and technology companies internationally, he has 30 years of experience in environmental consulting.

Kevin O'Brien Fehr
Kevin O'Brien Fehr has worked with GlaxoSmithKline since 1992, managing research and genetics studies conducted with its Canadian partners. She previously spent five years as a liaison with the Canadian medical research community for Sandoz Canada. She serves in an advisory capacity on several Boards of Directors including the AllerGen NCE and the Canada Foundation for Innovation, and works to attract international funding for Canadian researchers.

David Ross
David Ross is President of Langara College and is an accomplished academic and administrative leader. He has held faculty positions in marketing and Entrepreneurship at Langara College, the University of New Brunswick, Kwantlen Polytechnic University, and the Shad Valley Program. His experience spans 19 years of academic, corporate, and administrative successes.

Keith Stoodley
Keith Stoodley is the Senior Vice-President – Marketing with the Provincial Aerospace Group of Companies which provides maritime surveillance to the Government of Canada and the Dutch Navy. He is the Chairperson of a public-private partnership focused on the development of the ocean industry cluster in Newfoundland and Labrador and has served as member and director for many environment and business associations. He is also a registered lobbyist with the governments of Canada and Newfoundland and Labrador.

Jeff Turner
Jeff Turner is a biotech industry executive and entrepreneur with 20 years experience in Life Science product development/commercialization. Turner was CEO of Tissue Regeneration Therapeutics Inc. (TRT) and Adjunct Professor, Faculty of Dentistry, University of Toronto. He has 34 domestic and international patents and has published more than 100 peer-reviewed publications, book chapters and abstracts. As President & CEO of Nexia Biotechnologies Inc., the 2nd largest transgenic animal company in the world, Turner managed 124 employees in Canada and the US. He was responsible for raising $67 million of private & public funding. Turner joined TRT as CEO in 2006 and completed a $20 million licensing agreement for the company's stem cell technology.

MANAGEMENT COMMITTEE

Chair

Janet Walden
Vice-President of the Research Partnerships Program, Natural Sciences and Engineering Research Council of Canada (NSERC)

Members

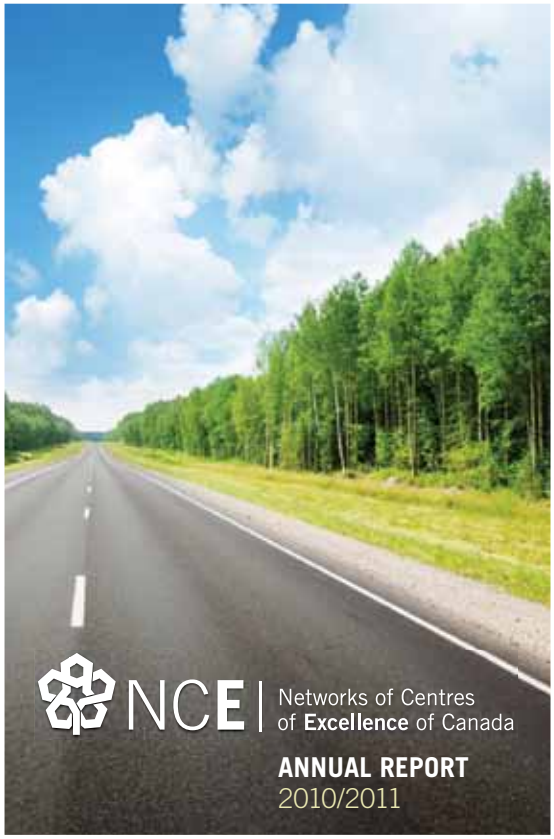
Dianne Calbick
Director General, Program Coordination Branch, Industry Canada

Jean-Claude Gavrel
Associate Vice-President of the Networks of Centres of Excellence (NCE)

Ian Graham
Vice-President of Knowledge Translation, Canadian Institutes of Health Research (CIHR)

Danielle Ménard
Director, Policy and International Relations Division, Natural Sciences and Engineering Research Council of Canada (NSERC)

Gisèle Yasmeen
Vice-President of the Partnerships Branch, Social Sciences and Humanities Research Council of Canada (SSHRC)



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