



CONNECT. COLLABORATE. PROSPER.

**STRATEGY FOR PARTNERSHIPS
AND INNOVATION**

INTERIM PROGRESS REPORT

DECEMBER 2012



Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

Canada 

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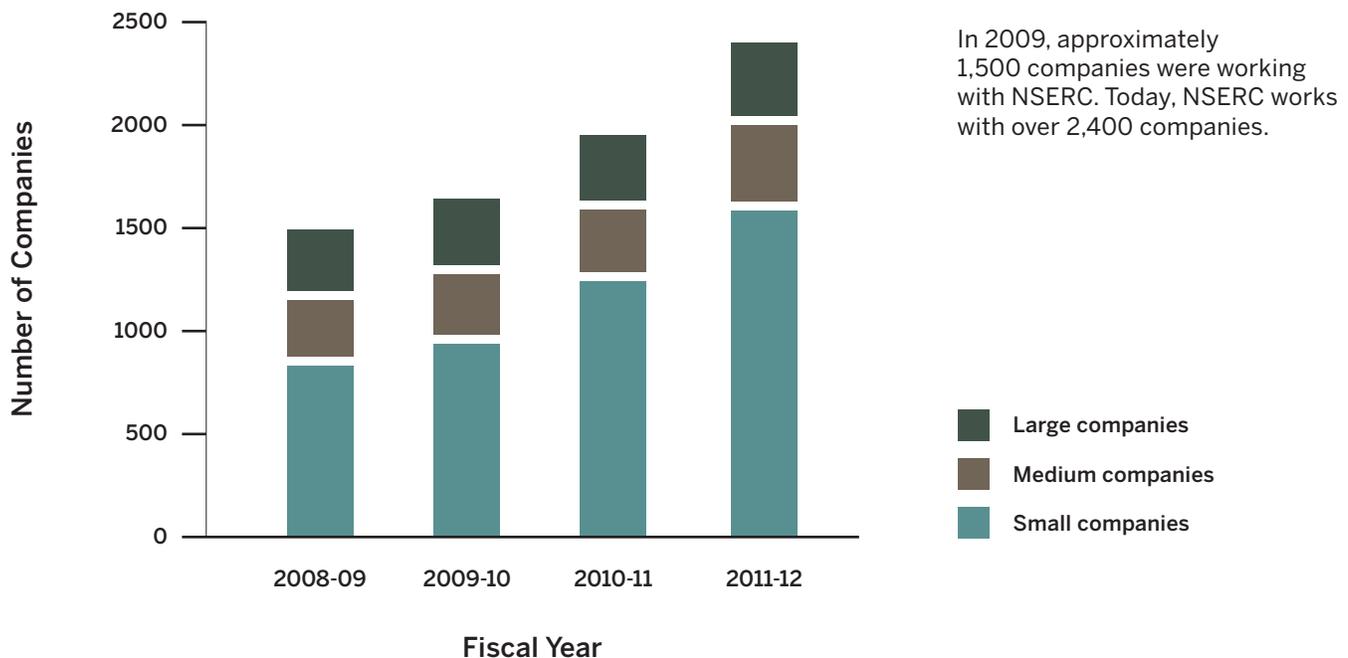


Helping Canadian businesses better connect, collaborate and prosper

In 2009, following a year of consultations with businesses, the Natural Sciences and Engineering Research Council of Canada (NSERC) launched its most ambitious strategy to date to support industrial innovation—the Strategy for Partnerships and Innovation. The goals of the Strategy are to help Canadian businesses realize greater value from their investments in research and development, to accelerate commercialization, and to help students acquire the skills businesses value.



More companies of all sizes are working with NSERC



STRATEGY FOR PARTNERSHIPS AND INNOVATION

Three years into the Strategy's implementation, NSERC's first progress report identifies concrete results achieved in support of business innovation, and research and development (R&D) in Canada, and suggests the next steps required to maintain the momentum.



Businesses told us they needed:

opportunities for industry and researchers to work together to support business R&D and innovation, to help grow revenues, and to expand markets for new products.

In response, NSERC concentrated on four areas:

1. Building sustainable relationships;
2. Streamlining access to NSERC programs;
3. Connecting people and skills; and
4. Focussing on priority sectors.

The results are compelling:

- Industrial contributions to NSERC research partnership programs are increasing.
- Businesses are finding solutions to their R&D challenges.
- University and college students and graduates are acquiring the skills they need to find valuable work opportunities.
- Communities across Canada are benefiting from locally led innovation activities.

"With the [NSERC Industrial Research] Chair we've had opportunities to improve both technology and production processes. This ensures we can compete in a global market."

Paul Zubick

Vice-President, Sales Waiward Steel Fabricators, a steel fabricator and erector

"This kind of technology is not likely something we could have developed in-house, because it really needs specialized expertise and input from a wide range of disciplines. That's the great advantage of working with the university."

Robert Phernambucq

Engineer, TransCanada Pipelines Ltd., an energy company

"We tapped into NSERC to get us to the next level. Without NSERC's support, it would likely have taken us a lot longer to bring the biodiesel and co-products to market."

Zenneth Faye

Executive Manager, Milligan Bio-Tech Inc, a bio-diesel producer



1. Building sustainable relationships



Our 2009 commitment

Facilitate business-academic relationships to create a strong foundation for future collaboration.

2012 results

- Supported more than **5,400 projects** between businesses and academia.
- Enabled **1,700 new projects** between companies and academic researchers who had never worked together before through the newly established NSERC Engage Grant (a six-month grant for researchers to work on a company's specific R&D challenges).
- Helped over **800 companies** use NSERC for the **first time** to work with a researcher.
- Increased industry awareness of the benefits of partnered research, through *InPartnership*—a targeted bi-monthly newsletter distributed to a **readership of more than 8,000** and growing.
- Sharpened our customer focus by organizing our regional offices to concentrate on working with businesses to extend their R&D capacity by partnering with academic researchers.
- Connected companies to researchers through **240 targeted match-making events** held across Canada.

What businesses report about their Engage Grant projects

94%

described the project as a success

73%

said the project will contribute to new business opportunities

97%

gained new knowledge or technology

92%

linked the project to new product or prototype development

"NSERC's support for industry-university collaboration has enabled our researchers to explore new applications for their discoveries and has offered students opportunities for exploring innovation related careers".

Stephen Toope

President, University of British Columbia

"The Engage partnership places us on the cutting edge and confers a competitive advantage. This was one of the most productive and easiest to manage collaborations in terms of funding, and a valuable program for both industry and academia."

Gladys Stephenson

Senior Environmental Toxicologist,
Stantec Consulting, an engineering
consulting company

2. Streamlining access to NSERC programs



Our 2009 commitment

Streamline access to NSERC partnership options to help businesses achieve greater value from working with Canadian universities and colleges.

2012 results

- Reduced red tape through a simplified application process and faster decision times on grants.
- Introduced a flexible intellectual property policy that protects the rights of all participants.
- Provided businesses with access to specialized facilities and researchers through **five pilot Technology Access Centres** at colleges across Canada.
- Supported targeted, longer-term R&D through over **186 Industrial Research Chairs** at universities and colleges.
- Accelerated the development of 201 promising university technologies into the Canadian marketplace, and introduced a new option for universities and colleges to work together with companies on commercialization projects.
- Partnered with sectoral and regional granting and business development organizations to streamline access to NSERC opportunities.

What businesses report about their collaborative research projects

93%

found their project was a worthwhile investment

80%

have developed new products and services, improved their processes, or increased competitiveness as a result of their work with a researcher

75%

reported ongoing collaborations with researchers after the project

98%

transferred the knowledge gained in the project into their business

“The [NSERC-supported] research has opened up a much larger market for our product and we look forward to commercializing the findings. Engage is by far the most effective program for universities to work with corporations.”

Zarrar Sikander

CEO, Youtext Mobile Technologies Inc.,
a mobile marketing firm

“We congratulate the Government of Canada for responding to the needs of business and supporting the contributions of colleges and polytechnics through the College and Community Innovation Program.”

James Knight

President and CEO, Association of
Canadian Community Colleges



3. Connecting people and skills



Our 2009 commitment

Connect Canada's graduates to businesses, thus improving their employment prospects by ensuring they have the skills businesses value.

2012 results

- **10,000 students** were funded to work in collaboration with industry in 2012 (up from 8,000 in 2009).
- **Over 225 fellows—recent PhD graduates—** were funded to work in companies in 2011–12, a 57% increase since 2009.
- 80% of these companies reported that the fellows had improved the company's capability in R&D; and 87% were interested in hiring another fellow.
- **87% of all recent PhD graduates** interning with a company **found full-time employment** after their internship; half were hired full-time by the company they interned with.
- The number of undergraduates doing R&D internships in industry increased from **718 to 1,005** between 2009 and 2012.
- Made it easier for companies to apply for internship opportunities.

"Working with students helps us to spot promising new employees with expertise that's well matched to our business needs."

Gerard Campeau

CEO of Thermal Electronics Corp., an innovative thermoelectric power generation company

"NSERC's IRDF program allowed me to find a workplace where I could pursue my research interests and convert the results into real-life solutions. After the fellowship, I was offered a full-time position at the company to continue my work."

Yu-Shen Yang

Recent PhD graduate

"NSERC's IRDF internship is an excellent example of how increased access to advanced research capacity can help create world-class technologies. Our researcher played a key role in developing the most critical component of our technology platform."

Marc Pinto

Chief Technology Officer, Marport Deep Sea Technologies, a developer of sensing and communication technologies for deep-sea exploration

4. Focussing on priority sectors



Our 2009 commitment

Provide opportunities for international-scale efforts by leading research groups to advance solutions to Canada's most challenging economic, environmental and social problems and opportunities.

2012 results

- Accelerated innovation in automotive design and engineering through the Automotive Partnership Canada initiative—a single-window approach involving five federal agencies. A \$91-million dollar investment to date has **generated \$175-million in R&D activity** between the private sector and university partners.
- **Increased opportunities for Canadian participation in international research projects** with countries such as Brazil, China, France, India, Japan and Taiwan.
- Aligned NSERC strategic initiatives to ensure that large-scale, NSERC-funded projects address priority sectors—environmental science and technologies, natural resources and energy, health and related life sciences, information and communications technologies, and manufacturing.
- Collaborated with 35 federal, 47 provincial and 57 municipal departments and agencies.

“The Automotive Partnership’s first three years have established a highly successful, essential and effective innovation tool for the automotive sector.”

**Automotive Partnership Canada
Industry Advisory Committee**

“NSERC’s Engage Grant has helped us enhance the performance, price and reliability of our product—results that we anticipate will translate into commercial success.”

Antoine Paquin

Founder, President & CEO, Solantro Semiconductor Corp.,
a manufacturer of photovoltaic components

“NSERC has been with us every step of the way and has played a key role in nurturing the fundamental science, skilled talent and real-world innovations that give Integran its edge.”

Gino Palumbo

CEO, Integran Technologies, Inc.,
an aerospace materials manufacturer



Conclusion



Against the backdrop of slowed global economic growth and decreased business expenditure on R&D in Canada, NSERC partnership initiatives have been connecting business to academia to create concrete results for companies, promote economic growth, and create jobs. Over the last three years, increasing participation and greater financial contributions from companies that work with us indicate that we are on the right track.

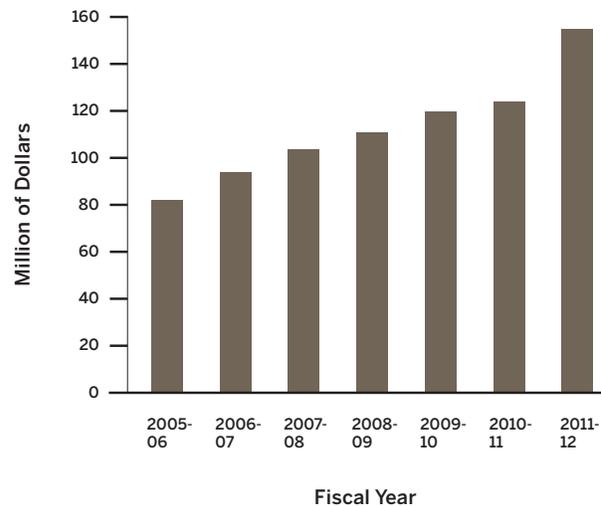
- Businesses have been finding solutions to their R&D challenges.
- University and college students and graduates have been gaining business-relevant skills that lead to valuable work opportunities.
- Communities across Canada have been benefiting from locally led innovation activities with national and global impacts.

"Our collaboration with Ryerson gave us about a five-year head-start over our competitors and has helped us grow the drive part of our business from around \$40 million six years ago to \$150 million today. During that same period, we have also doubled the size of our R&D group to 55 people".

Navid Zargari

Manager, Medium Voltage Development, Rockwell Automation, an industrial automation company

Industrial contributions to NSERC research partnerships are growing





How we can do even better



A record of demonstrated success in helping more businesses extend their R&D capabilities shows that, by working together, Canadian businesses and academic institutions can help move Canada ahead in the global innovation race. Going forward, there are several targeted areas where NSERC will focus its efforts.

We intend to do the following in the next stage of our strategy:

- Enhance the impact of NSERC support for specific sectors with continued guidance and feedback from industry.
- Help smaller-sized companies make the leap between short-term, smaller-scale partnered projects to larger, longer-term initiatives.
- Continue to support the development of innovation skills among university and college students.
- Support research participation in global R&D collaborations.
- Connect even more businesses with colleges, by doubling the number of Technology Access Centres.
- Meet the growing demands of companies for access to R&D capabilities at Canada's universities and colleges.
- Keep increasing the number of companies working with NSERC to reach our target of 3,000 industrial partners by 2014-15, by continuing to broaden corporate awareness of the value of R&D partnerships with Canada's universities and colleges.

- Continue building relationships between businesses and researchers to help businesses increase their revenues, create jobs, and contribute to Canada's tax base and prosperity.

"The Engage Grant was the ideal fit for us as a start-up company. It enabled us to quickly qualify the opportunity, because for us it's all about the follow-on investment right now."

Robert Morrow

CEO at KnowCharge, a next-generation battery company

"For more than 10 years, NSERC has been CRIAQ's preferred partner for building research partnerships in the area of aerospace. This collaboration has spurred the participation of more than 650 student researchers and of 600 experts and researchers in multidisciplinary teams, enabled CRIAQ to support larger scale projects totalling, to date, more than \$124 million, and helped develop a highly qualified workforce."

Clément Fortin

President and CEO, CRIAQ