



InPartnership - Volume 3, Issue 4 - December 2012

The Natural Sciences and Engineering Research Council of Canada's (NSERC) InPartnership bi-monthly e-bulletin showcases the many ways Canadian business can connect and collaborate with researchers, and prosper as a result.

Latest News

Put Canada's R&D Talent to Work for you: Competition for new business-led networks

The Business-Led Networks of Centres of Excellence (BL-NCE) program can put top researchers to work solving challenges faced by a particular industry sector.

This program has pioneered a new approach to collaborative research since its inception in 2007. Led by a not-for-profit, industry-led consortium, networks bring together teams from academia and industry with the right expertise to address major R&D and commercialization challenges. The research agenda focusses on solving problems identified by the private sector, with program funding paying up to half of the research costs. The BL-NCE is the only program of the three federal funding agencies to allow networks to fund private sector partners directly, so that they may do research within their own facilities.

A future competition is expected for new networks. You will want to be ready for this major funding opportunity (average network is \$3 million per year for five years). Visit the NCE website to [sign up for competition alerts](#). Or contact the NCE Secretariat at info@nce-rce.gc.ca or 613-995-6010.



NSERC to Launch New Grants Management System in 2013

NSERC is developing a new electronic Grants Management System, which will make the on-line application and grant management process simpler, more streamlined and user-friendly. A new on-line portal will provide a single point of entry for applicants, reviewers, committee members, institutions and partners working with NSERC.

The CCV and with the Grants Management System will be phased in program by program starting with the Collaborative Research and Development Grants and Subatomic Physics Discovery Grants in spring 2013, and followed by the Discovery Grants. More information and opportunities to test the new system will be provided in the New Year. Learn more in the last edition of [Contact Newsletter](#).

International Collaboration Opportunities with Brazil, France, Japan and Taiwan

Working with researchers on international collaborations? Researchers and their teams are invited to begin planning for international collaboration opportunities that will be available through the 2013 [Strategic Project Grants Competition](#), set to open in January 2013.

New Opportunities for 2013

NSERC and the São Paulo Research Foundation, la Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) of Brazil have agreed to launch a concurrent call for proposals for the 2013 Strategic Project Grants Competition. More details will be available in January 2013.

Changes to Ongoing Collaboration Opportunities

Ongoing collaboration opportunities continue to be available through the French National Research Agency (ANR), the Taiwan National Science Council (NSC) and the Japan Science and Technology Agency (JST) will be accepting applications in "Renewable Energy" and "Energy Use" research topics under the Natural Resources and Energy target area. More details will be available in January 2013 on the Strategic Project Grants Competition page.



Successful Partnerships

Interested in partnering? Wondering about the return on investment? Learn how companies across Canada are working with researchers to advance their products or processes by participating in an NSERC partnership.

Growing Together

When Edmonton-based plastic parts producer [Drader Manufacturing Industries Ltd.](#) wanted to increase operational efficiency, the NSERC Prairies Regional Office connected the company to [Yongsheng Ma](#) at the University of Alberta's Department of Mechanical Engineering.

The two used an NSERC [Interaction Grant](#) to connect, and Dr. Ma's ideas showed such promise that they quickly decided to work together through an NSERC [Engage Grant](#) to explore ways Drader could reduce waste plastic during production, develop stronger parts and make more precise cost estimates.

"The greatest thing was the collaboration - Dr. Ma and his team brought fresh eyes, and strong engineering expertise to the project," said Kevin McTavish, Vice-President of Manufacturing at Drader Manufacturing Industries Ltd.

"To see your technologies applied in the real world brings a sense of fulfillment to your research. Working with Drader allowed me to put some of my past work to good use," said Dr. Ma.

Drader and Dr. Ma are continuing their partnership through an [NSERC Collaborative Research and Development Grant](#).

"The support from NSERC encouraged us to look at longer-term collaborations," said Dr. Ma.

According to McTavish, "We're not done yet. I don't know if you're ever finished when it comes to research and product development."

Seeing the light in space exploration

Using software from Canadian company [Maplesoft](#), [Amir Khajepour's](#) team at the University of Waterloo is helping to improve space exploration.

Maplesoft's "MapleSim" is a physical modeling and simulation tool which can be used to create a virtual product prototype.



"Before tools like ours came along, the only time you knew if your product was going to work was when you built your first prototype," says Paul Goossens, Vice-President of Applications Engineering at Maplesoft. "This software really shaves off a lot of time and expense by allowing you to do virtual prototypes."

Using an NSERC [Collaborative Research and Development Grant](#) (CRD), Dr. Khajepour's team is working to develop simulation and animation platforms for the design of a space rover, test-driving it to ensure that the solar panels maintain a line of sight to the sun.

"By animating the situation, we can see the location of the sun, the orientation and position of the rover and the best trajectory to get from point A to B," says Dr. Khajepour.

This technology has applications in other areas such as automotive, aerospace, and robotics, and Maplesoft is working with several leading companies in these industries. "We are helping Maplesoft get into these engineering areas," Dr. Khajepour says. "A new project that we have with them is in automotive engineering, and they are expanding their business."

"We got a much more solid product out of it," says Mr. Goossens. "And the two students who were hired from the project have been a real asset to the organization."

Carleton University Researcher Takes Idea from Lab to Sky

Travelling by helicopter is a bumpy ride. The vibration experienced by both passengers and pilots can lead to back pain, spinal injuries, pilot fatigue and higher maintenance costs. [Daniel Feszty](#) of Carleton University has created a technology to reduce vibration by as much as 80 per cent. Using an [NSERC Idea to Innovation \(I2I\) grant](#), Feszty's team developed the technology, hired an engineer, and created a demonstration facility to market their Active Pitch Link technology to potential industrial partners.

The concept of stiffness control to reduce vibration originated over 20 years ago, but many said it was only possible in theory. Active Pitch Link focuses on the idea of stiffness control and changing the structural response of the rotor to vibration.

"The industry needs to see the proof that what we're doing here is actually applicable to the helicopter industry," says Steve Vamosi, Chief Engineer of Smart Rotor Systems Inc., a spinoff company of the project.

"Other funds available for fundamental research do not allow you to employ an engineer at the commercialization phase, the NSERC I2I allows that," says Feszty, "The ultimate goal is to make the product successful and to do that you need the experience."