

# **2008 Business-Led Networks of Centres of Excellence (BL-NCE) Competition**

## **Report of the NCE Steering Committee**

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Canadian Institutes of Health Research  
Social Sciences and Humanities Research Council of Canada

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## Remarks from the Chair

In response to the first Business-Led Networks of Centres of Excellence (BL-NCE) competition launched in November 2007, the Networks of Centres of Excellence (NCE) Secretariat received 36 eligible Letters of Intent (LOI).

In March 2008, the Private Sector Advisory Board (PSAB) reviewed all 36 Letters of Intent and recommended that 10 applicants be invited to submit full proposals. Two of the 10 applicants (Bombardier Transport Inc., and Fuel Cells Canada) declined the NCE's invitation to submit a full proposal to the competition, citing the tight deadlines. The remaining eight proposals underwent an in-depth peer review between September 4-17. Thirty-three expert panel members were involved in the process (see Appendix III for the calendar and Appendix IV for a list of expert panel members). Taking into consideration the expert panel reports prepared for each of the eight applications, the PSAB made its recommendations to the NCE Steering Committee on September 30, 2008, for funding for four Business-Led Networks of Centres of Excellence.

The NCE Steering Committee feels strongly that the recommended networks will all deliver significant economic, social and environmental benefits to Canadians. As well, it is anticipated that Canada's international leadership in R&D will be enhanced through the recommended awards.

As chair of the NCE Steering Committee, I am grateful to the members of the Steering Committee, the PSAB and the Expert Panels for their efforts, dedication, collegiality and commitment to the goals of the program.

## Background

*Mobilizing Science and Technology to Canada's Advantage*, the Government of Canada's S&T Strategy, sets out a multi-year policy framework to improve Canada's long-term competitiveness and quality of life by fostering three inter-related S&T-based advantages. The Strategy encourages an *Entrepreneurial Advantage* to strengthen private-sector commitment to R&D and innovation vital to productivity and competitiveness, a *Knowledge Advantage* to ensure Canadian universities and colleges sustain their world-class research excellence and a *People Advantage* so that Canada has access to the highly-skilled researchers and innovators it needs.

Announced in *Budget 2007*, the new BL-NCE Program's goal is designed to fund large-scale collaborative networks to enhance private sector innovation in order to deliver potential economic, social and/or environmental benefits to Canadians, and to promote an *Entrepreneurial Advantage*. More specifically, the intention is to increase private sector investments in research in Canada, support the training of skilled researchers and optimize the time line between research and commercialization.

Funded networks shall be world-class and expected to deliver the following benefits:

*Research-Related Benefits*

- Increased private sector R&D capacity (including among SMEs) and receptivity to the results of R&D.
- Increased private sector investment in R&D and advanced technologies.
- Strengthened public-private sector collaboration, including links between researchers and firms, to meet business needs by addressing the significant research challenges.
- High quality graduate and postdoctoral training in innovative applied research, and increased business skills and know-how of the young researchers.

*Commercialization-Related Benefits*

- Creation, growth and retention of companies in Canada that are able to capture new markets with new innovations.
- Accelerated commercialization of leading edge technologies, goods and services in priority areas where Canada can significantly advance its competitive advantage.
- Creation of clear paths to market, or business applications for the proposed research.
- Commercialization which positions Canadian firms in high-value segments of the production chains.
- Strengthening of domestic collaboration to ensure that benefits spill over to a wide array of firms, sectors and regions of the country.

Organizations eligible to receive funds are not-for-profit consortia that represent the interests of private sector enterprises with substantial R&D operations in Canada, or the potential to benefit from R&D (ideally comprising both SME and large companies, research providers and research-users).

The BL-NCE program follows a rigorous peer-review process to evaluate, first the Letters of Intent and secondly the full proposals, against the three criteria of the program (see Appendix I for a detailed list of the Program Criteria):

- Benefits to Canada
- Track Record and Potential of the Applicants
- Strength of the Business Plan

A consultation was carried out at the LOI stage with the provinces and key federal science-based departments and agencies to seek their views and priorities on the proposals within their jurisdiction and areas of interest. Each group that submitted a full BL-NCE application met with an Expert Panel responsible for performing an in-depth evaluation of the strengths and weaknesses of the proposed network. The individual Expert Panel reports were reviewed collectively by the PSAB and used to establish the final recommendation to the NCE Steering Committee. The BL-NCE program criteria are detailed in Appendix I. The biographical notes of the PSAB members can be found in Appendix II.

### **Steering Committee Decision**

The four new Business-Led Networks of Centres of Excellence are listed in alphabetical order of the network's official name:

- Canadian Forest Nano-Products Network (ArboraNano), Pointe-Claire, Quebec
- Green Aviation Research and Development Network (GARDN), Ottawa, Ontario
- Quebec Consortium for Drug Discovery (CQDM), Montreal, Quebec
- Sustainable Technologies for Energy Production Systems (STEPS) is an inclusive, sharply-focused, collaborative and cooperative initiative within the Petroleum Technology Research Centre (PTRC)

## **APPENDIX I – BL-NCE Program Criteria**

To ensure that the program objectives are met, proposals are assessed against the three selection criteria outlined below.

### **Criterion 1: Benefits to Canada**

- The extent to which the network will contribute to increasing private sector R&D receptor capacity, especially among SMEs.
- The potential to strengthen public-private sector collaboration, including links between young researchers and firms, to address significant research challenges that meet business needs.
- The capacity for the network to provide high quality graduate and postdoctoral training in innovative research and business skills.
- Evidence that the network will lead to commercialization benefits that position Canadian firms in high value segments of production chains.
- The opportunity offered by the network to create, grow and retain companies in Canada that are able to capture new markets with new innovations.
- The opportunity to accelerate the commercialization of leading edge technologies, goods and services in priority areas where Canada can significantly advance its competitive advantage in the global market.
- The applicants' ability to strengthen domestic and international collaborations and ensure that benefits spill over to a wide array of firms, sectors and regions of the country.

### **Criterion 2: Track Record and Potential of the Applicants**

- The achievements of the applicants and their ability to lead and direct the network's research program.
- Ability to identify and select the best possible expert researchers in academia, government and/or the private sector to carry out and achieve the research objectives.
- The ability of the private sector partners to assist in the training and potential hiring of innovative and internationally competitive researchers in areas and technologies critical to Canadian productivity, economic growth, public policy and quality of life.
- The ability of the applicants to attract investment.

### **Criterion 3. Strength of the Business Plan**

- Excellence, focus and coherence of the research program.
- The ability of the applicants to outline a clear path to market or business applications for the proposed research.
- The extent the BL-NCE can leverage funding from partners and other government and non-government sources.
- The likelihood of the BL-NCE to stimulate support to continue beyond the four-year funding cycle.
- The effectiveness of the plan to manage, protect and exploit intellectual property resulting from network-funded research.
- The quality and appropriateness of the proposed organizational structure with suitable representation on the Board of Directors and management team.
- Evidence that the applicants have an accountability framework in place that is likely to result in effective leadership and sound financial decision-making.

## APPENDIX II- Biographical notes of the Private Sector Advisory Board

The Private Sector Advisory Board was established in August 2007 by the NCE Secretariat, fulfilling a commitment made by the Government of Canada in *Budget 2007* to establish such a body.

The PSAB provides the NCE Steering Committee with expert advice and recommendations in the BL-NCE and CECR competition processes. PSAB members recommend projects expected to create a strategic, long-term economic advantage for Canada. The PSAB is also be involved in the peer-review process for NSERC's College and Community Innovation Program.

The PSAB members who participated in the review of proposals in the 2008-09 BL-NCE Program Competition are as follows:

**The Honourable Perrin Beatty (Chair):** President and Chief Executive Officer (CEO) of the 170,000 member Canadian Chamber of Commerce. Prior to joining the Canadian Chamber in August 2007, Mr. Beatty was President and CEO of Canadian Manufacturers and Exporters (CME). He was President and CEO of the Canadian Broadcasting Corporation (CBC) and has held portfolios in Progressive Conservative governments, including Treasury Board, National Revenue, Solicitor General, National Defence, Health and Welfare, Communications, and Secretary of State for External Affairs. Mr. Beatty serves on a number of Canadian Government advisory committees covering issues that include national security, border management, privacy and international trade. He is also a member of the Advisory Council of the Canadian Defence and Foreign Affairs Institute and served for five years as Business Co-Chair of the Canadian Labour and Business Centre.

**Sue Abu-Hakima:** Co-founder, President and CEO of Amika Mobile Corporation, her second start-up, launched in 2007. She is an Adjunct Professor at the University of Ottawa. She sits on the Board of Directors of the Ontario Centres of Excellence and is Chair of the Board of Management for the Center of Excellence for Communications and Information Technology. She is also on the Board of the Ottawa Software Cluster. In 2003, she contributed to the Prime Minister's Task Force on Women Entrepreneurs. Dr. Abu-Hakima holds 19 international patents in messaging and content analysis, with a 20<sup>th</sup> pending. She has published and presented over 100 papers. Dr. Abu-Hakima holds master's and doctorate degrees from Carleton University in Ottawa, with a specialization in artificial intelligence.

**Alan Bernardi:** Director of Bell University Laboratories (BUL). He manages over 60 research and development projects in the BUL initiative in Canada. In 2005, he received the First Invention Award which recognizes and rewards BCE innovators for creating and developing their first patentable invention. Since 1984, he has worked at CAE Electronic, Bell-Northern Research (BNR), Nortel, Bell Emergis and Centre de Recherche Informatique de Montréal (CRIM) as a Director for research teams in telecommunications, software engineering and knowledge-based systems. At CRIM he established two international partnerships. From 1993-1996, he taught in the McGill University MBA program and currently teaches in the Department of Industrial Engineering at École Polytechnique de Montréal. Mr. Bernardi is a member of the scientific committee for the Mathematics of Information Technology and Complex Systems (MITACS) Networks of Centres of Excellence.

**Patrick Champagne:** In 1998, Patrick Champagne was appointed to the position of Vice-President, CMC Electronics. In this role, he is responsible for the engineering support solutions for the three sites of CMC in Quebec, Ontario and the United States. His career at CMC Electronic started in 1986 as a developer. After that, he held various project engineering positions from 1988 to 1993, and was Chief Engineer for the Communications Group from 1993 to 1998. Before joining CMC Electronic, he was an electronic engineer with Nortel and Spar Aerospace from 1982 to 1986. Mr. Champagne holds a Bachelor's degree in Electrical Engineering, obtained in 1982, and a Master's degree in Applied Sciences, obtained in 1986. Both degrees are from École polytechnique in Montreal. He also obtained, in 1994, a Master's degree in Business Administration (MBA) from McGill University. He is a member of the Order of Engineers in Quebec and the IEEE. He is a member of the administration council of the l'École de technologie supérieure since 2002, and he was appointed Chair from 2004 to 2007. He also sits on the Board of the Consortium for Research and Innovation in Aerospace in Québec (CRIAQ) since it was formed in 2003, and is a member of the Innovation Committee, Aéro Montréal. He served on the Board of the Association de la recherche industrielle du Québec (ADRIQ), on the advisory committee for the Fonds Nature et Technologie du Québec (NATEQ) and was a member of the jury for the Prix du Québec in Applied Sciences.

**Kevin O'Brien Fehr:** Since 1992, Dr. Fehr, who has a background in pharmacology, has managed basic research and genetics studies conducted in Canadian companies and universities on behalf of GlaxoSmithKline (GSK). She also works to attract funding from GSK's international sources to support Canadian researchers. She serves in an advisory capacity on several Boards of Directors, including the AllerGen Network of Centres of Excellence and the Canada Foundation for Innovation. After working for 10 years at the Addiction Research Foundation of Ontario as a scientist and educator, Dr. Fehr joined the staff of the Medical Liaison Service of Sandoz Canada. There, she spent five years liaising between the company and the Canadian medical research community in the areas of psychiatry and neurology.

**Fred Hemphill** has played a key role in the transformation of Alberta's oil sands industry. He spent his entire career at Syncrude Canada Ltd., retiring from the position of Vice-President, Technology Project Development and Research. He was responsible for the research and development of new technological innovations and for the engineering and construction of these technologies. During his long and distinguished career at Syncrude, he held many senior management positions including Vice-President, Bitumen Process, and Vice-President, Human Resources and Support Services. Mr. Hemphill is a past-president of the Fort McMurray United Way and has served on boards and committees of Keyano College, the Alberta Science Centre and the Oil Sands Discovery Centre.

**Raymond Leduc** heads IBM's largest semiconductor assembly and test site in Bromont, Quebec, which produces microelectronic components for all of IBM's leading products as well as the microprocessor components for the Nintendo Wii, Microsoft's Xbox 360, and Sony's Playstation 3. Mr. Leduc joined IBM in 1981. He has held various management positions in the engineering and finance departments before being named Director of the Bromont plant in 2003.

**Donald Lush:** President of Environmental Bio-detection Products Inc. in Mississauga, Ontario. EBPI develops and manufactures biologically based testing kits for evaluation of toxicity of contaminants in environmental media and the evaluation of chemicals and environmental samples. During his 30 years in the environmental consulting business, Mr. Lush has served in technical, management and advisory roles as founder, president and chairman of a number of environmental and technology focused companies in Canada, the U.S. and Europe. He spent most of his consulting career with Beak International as a senior principal and board member and acted as Chairman of the Board for 15 years. He is Chair of the Board of Microbial Insights, located in Knoxville, Tennessee.

**John MacDonald** has had a distinguished career in the technology community in Canada. Dr. MacDonald is currently Chairman and CEO of Day4 Energy Inc., a solar energy company dedicated to exploiting photovoltaic technology. He was also a co-founder of MacDonald Dettwiler and Associates (MDA), Canada's principal space company, serving as President and CEO for 13 years, and Chairman for a subsequent 16 years until his retirement in 1998. Dr. MacDonald was a faculty member in engineering at the University of British Columbia and the Massachusetts Institute of Technology (MIT) for 12 years prior to the founding of MacDonald Dettwiler. He has served on the boards of numerous technology companies and continues to do so. He has been an advisor to Canadian, U.S. and other governments. He is a member of the Canadian Department of National Defence Science Advisory Board and the International Energy Agency in Paris.

Dr. MacDonald's technical interests lie in the areas of photovoltaic energy systems, advanced digital systems engineering and remote sensing. He led the design team for the U.S. government's first LANDSAT ground processing system. In later years, Dr. MacDonald's technical activities concentrated in the areas of information extraction from advanced sensor systems. Dr. MacDonald earned his PhD from MIT in 1964. Dr. MacDonald has been awarded eight Honorary Degrees and is an Officer of the Order of Canada. In 2000, he was awarded the John H. Chapman Excellence Award of the Canadian Space Agency, the Agency's highest award. In 2006, he was inducted as a Laureate of the British Columbia Business Hall of Fame and received the Entrepreneur of the Year's Lifetime Achievement Award from Ernst and Young.

**Keith Stoodley:** Senior Vice President of Marketing with the Provincial Aerospace Group of Companies, based in St. John's, Newfoundland, which specializes in fixed-wing, aircraft-based maritime surveillance modifications and operations. Mr. Stoodley also chairs a public-private partnership focused on the development of the ocean industry cluster in Newfoundland and Labrador. Prior to 2005, he was Vice-President and Director, Oceans, with the Lotek Group. Under his stewardship, Lotek received Canada Exporter Awards in 2002 and 2003, and the National Research Council's Innovation Award in 2004. He has served as a director and a member of the Environmental Export Council of the Canadian Environmental Industry Association, the Atlantic Chamber of Commerce Innovation Council, Memorial University of Newfoundland and Labrador's Genesis Centre and International Business Advisory Council, and the National Round Table on the Environment and the Economy.

**Jeff Turner:** CEO of Tissue Regeneration Therapeutics Inc. Dr. Turner is a biotech industry executive and entrepreneur with 20 years of experience in life science product development and commercialization. He is also an Adjunct Professor in the Faculty of Dentistry at the University of Toronto. He holds 34 domestic and international patents and has published more than 100 peer-reviewed articles, book chapters and abstracts. As President and CEO of Nexia Biotechnologies Inc., the world's second-largest transgenic animal company, Dr. Turner managed 124 employees in Canada and the U.S and raised \$67 million in private and public funds. In 2006, he completed a \$20-million licensing agreement for the company's stem cell technology.