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# Networks of Centres of Excellence 20<sup>TH</sup> ANNIVERSARY REPORT

1988

Federal Government announces \$240 million NCE program as a new four-year initiative. The three federal granting agencies are mandated to conduct a competitive peer-review process involving international experts.

1989-1990

First 15 networks selected for four-year funding cycle: Canadian Aging Research Network (CARNET); Canadian Bacterial Diseases Network (CBDN); Centre of Excellence for Molecular and Interfacial Dynamics (CEMAID); Canadian Genetic Diseases Network (CGDN); Canadian Institute for Telecommunications Research (CITR); Concrete Canada; Canadian Network for Space Research (CNSR); Insect Biotech Canada (IBC); Respiratory Health Network of Centres of Excellence (Inspiraplex); Institute for Robotics and Intelligent Systems (IRIS); Microelectric Devices, Circuits and Systems (Micronet); Mechanical Wood-Pulps Network (MWPN); NeuroScience Network; The Ocean Production Enhancement Network (OPEN); and Protein Engineering Network (PENCE).

1993

Federal Government announces Phase II of NCE program with four-year budget of \$197 million.

1994

Competition announced for new Phase II networks. Funding is set at \$48 million over four years.

10 of the original 15 networks are selected to continue to Phase II four-year funding cycle: CBDN; CGDN; CITR; Concrete Canada; Inspiraplex; IRIS; Micronet; MWPN; NeuroScience Network; and PENCE.

1995

Four new networks announced for four-year funding cycle: Intelligent Sensing for Innovative Structures (ISIS); Sustainable Forest Management Network (SFM); Health Evidence Application and Linkage Network (HEALNet); and TeleLearning Network of Centres of Excellence (TeleLearning).

1997

NCE becomes permanent program with annual budget of \$47.4 million.  
Seven networks renewed, representing investment of \$94.3 million over four years: CBDN; CGDN; Micronet; CITR; MWPN; IRIS; and PENCE.

1998

Four networks selected for second four-year funding cycle, receiving \$35 million in continued funding: HEALNet; ISIS; SFM; and TeleLearning.

Four new networks announced: Canadian Arthritis Network (CAN); Geomatics for Informed Decisions Network (GEOIDE); Mathematics of Information Technology and Complex Systems (MITACS); and Canadian Institute for Photonic Innovations (CIPI) – \$54,024,900 for 1998-2002.

1999

Federal budget increase of \$30 million per year for NCE program brings annual budget to \$77.4 million.

2000

Three new networks announced: Network in Aquaculture (AquaNet); Canadian Stroke Network (CSN); and Canadian Network for Vaccines and Immunotherapeutics (CANVAC) – \$91,000,000 for 1999-2006.

2001

Four new networks announced: AUTO21 Network of Centres of Excellence (AUTO21); Canadian Language and Literacy Research Network (CLLRN); Canadian Water Network (CWN); and Stem Cell Network (SCN) – \$132,237,510 for 2000-2007.  
Two networks renewed for second funding cycle: ISIS; and SFM – \$51,100,000 for 2001-2009.

## NCE RETROSPECTIVE



Government of Canada  
Networks of Centres  
of Excellence

Gouvernement du Canada  
Réseaux de centres  
d'excellence



## MESSAGE FROM THE CHAIR OF THE NCE STEERING COMMITTEE



For the past 20 years the NCE program has supported some of Canada's best researchers and students to work collaboratively with industry, government and other organizations in networks operating as "virtual institutes". These networks are focused on advancing knowledge and applying it to the benefit of Canadians.

The NCE networks have helped to train thousands of highly qualified people, created new policies for natural resource management, and developed national disease prevention and treatment strategies, to name but a few of our successes.

Over the past two years the Networks of Centres of Excellence grew significantly as a result of new programs established through the Science and Technology Strategy of the Government of Canada. We now support the Centres of Excellence for Commercialization and Research and Business-Led Networks of Centres of Excellence – programs dedicated to enhancing collaborations that will mobilize research excellence and commercialization for the benefit of all Canadians.

The long-term success of the Networks of Centres of Excellence has been made possible through consistent, reliable funding from the Government of Canada and through the co-operation between the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research, the Social Sciences and Humanities Research Council and Industry Canada.

I invite you to learn more about the impact of the NCE programs, and with the current generation of networks and centres.

**Dr. Suzanne Fortier,**  
NSERC President,  
Chair NCE Steering Committee

## NCE STEERING COMMITTEE MEMBERS

The NCE Programs are administered by the NCE Secretariat. The Secretariat reports to the Steering Committee.

### CHAIR

**Suzanne Fortier**  
President  
Natural Sciences and  
Engineering Research Council

### MEMBERS

**Alain Beaudet**  
President  
Canadian Institutes  
of Health Research

**Richard Dicerni**  
Deputy Minister  
Industry Canada

**Chad Gaffield**  
President  
Social Sciences and  
Humanities Research Council

**Dr. Eliot A. Phillipson**  
President and CEO  
Canada Foundation  
for Innovation

**Robert Dunlop**  
Assistant Deputy Minister  
Industry Canada

“The hard data contained in this report show irrefutably that the Networks of Centres of Excellence Program has succeeded in meeting its goals. The NCEs and CECRs bring together Canada's best minds from across many disciplines and give them the means to dramatically expand research capacity. As well, the patents, licences, spin-off companies and jobs that they have generated over the years are proof that the NCE model produces benefits far beyond the original investment. In particular, the Networks and CECRs in the health field are speeding up the translation of new research knowledge into products, policies and practices that improve the health and wellbeing of Canadians.”

**Alain Beaudet**  
President  
The Canadian Institutes of Health Research

“Congratulations to the Networks of Centres of Excellence on 20 years of supporting Canadian research and networking excellence. The program's success is attributable to the collaborative partnerships formed among the academic, public, private and not-for-profit sectors. The program is now also an example of collaboration among the three federal granting agencies in implementing the Government of Canada's Science and Technology Strategy.”

**Dr. Chad Gaffield**  
President  
The Social Sciences and Humanities  
Research Council of Canada

# NETWORKS OF CENTRES OF EXCELLENCE – OVERVIEW

## NETWORKS OF CENTRES OF EXCELLENCE PROGRAM OVERVIEW

Risk taking, innovation, boldness, and most importantly results and impacts have been the trademarks of the NCE program. The NCE program has been hailed as an innovative model of connecting R&D to the economic, health and social well-being of Canada. The program is based on five central features:

1. Mobilization of Canadian research excellence
2. Training of highly skilled personnel in Canada
3. Networking and Partnerships with Industry and other relevant partners
4. Transferring knowledge generated to user sectors
5. Promoting Effective Management Structure

The launch of the NCE program in 1988 set in motion a significant cultural shift within Canada’s research community. By breaking down the barriers between disciplines, institutions, and sectors, the program challenged researchers and their partners to embrace collaboration and a multidisciplinary approach to build a critical mass of expertise in research areas of strategic importance. Across-the-board success in knowledge generation, technology transfer and leveraging private sector investment has made the NCE a model of multidisciplinary, cross-sector collaboration practices.

Building on the successes of its flagship program, the “Networks of Centres of Excellence”, the NCE is again pioneering new models of collaboration. The NCE has launched three new programs to continue to foster success in the mobilization of R&D investments. These new visionary

programs, along with the original NCE program, provide solutions for the economic, health, and social challenges Canadians and Canada will face in the coming years by focusing on four areas:

- Increase Industrial investment in R&D partnerships
- Engage highly qualified experts within industrial sectors
- Bring together people from various disciplines and sectors to find solutions for the concerns faced by Canadian society
- Accelerate the commercialization of technologies, products and services

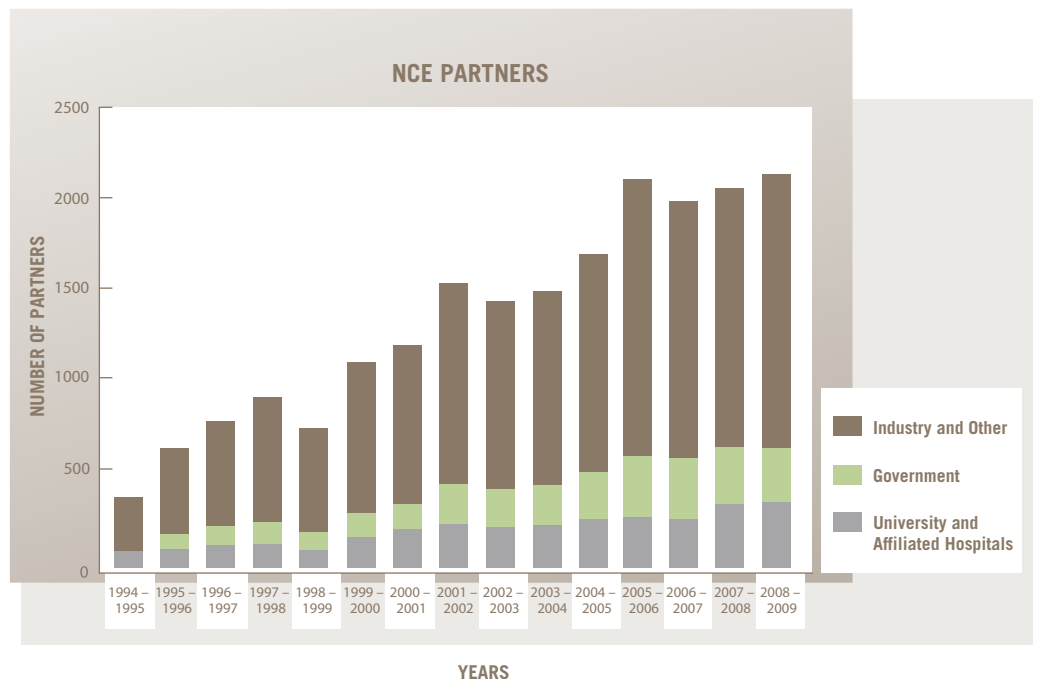
### TOTAL INVESTED PER PROGRAM

Program	Total invested
NCE	\$1,314,939,852
BL-NCE	\$9,743,875
CECR	\$198,386,385
IRDI	\$4,260,000
<b>TOTAL</b>	<b>\$1,527,330,112</b>

**NOTE:**

NCE	1989-2009	CECR	2007-2009
BL-NCE	2008-2009	IRDI	2008-2009

*The Council of Canadian Academies’ “Mobilizing Science and Technology: The New Federal Strategy” called the NCE “one of the most influential major federal science initiatives” in the past decade.*



# NETWORKS OF CENTRES OF EXCELLENCE PROGRAM SPIN-OFF COMPANIES



**PENCE** — Chenomx Inc.  
Converzyme Inc.  
Drug Discovery Libraries Inc.  
Molecular Mining Inc.

**CITR** — Accelight Networks

**Concrete** — InfoWard Inc.

**GEOIDE** — Miovision Technologies Inc.  
Geotango  
Sim Active  
Sim Tech

**ALLERGEN** — Adiga Life Sciences Inc.

**CBDN** — Polaris Biosciences  
TheraCarb Inc.  
SynGene Biotech Inc.  
SEMGEN Biotechnology Inc.  
SignalGene Inc.  
Micrologix Biotech Inc  
SPI Diagnostics  
NoAb Immunoassay  
Synsorb Biotech Inc

**CAN** — Biomomentum  
MOUNT SINAI SERVICES Inc.  
Affference Therapeutics  
InflammatoRx  
Arthritis Consumer Experts  
Canadian Rheumatology Research Consortium  
Medexus Inc. (Toronto)  
Transition Therapeutics and diagnostics Inc. (Toronto)

**AFMNET** — Flora Pure Inc.

**TL-NCE** — Cogigraph Technology Inc.  
Telestraining Inc.  
Inventures Incubator Inc.  
CRF Technologies Group Ltd.  
Thoughtshare Communications  
Expresto Software Corp.  
Instructional Systems Engineering  
Neologos  
Nomino Technologies  
TELESTraining Inc.  
VLEI  
Helios Media

**MICRONET** — Sirific Wireless Corp.  
Snowbush Inc.  
Vector 12  
LV Software  
Cadabra Design Libraries Inc.  
Right Track CAD (Acquired by Altera)

*The programs play a critical role in reducing the pre-commercialization gap by funding initiatives that help the private sector use the research expertise available within Canada to solve pressing research needs – either to seize an opportunity or mitigate a threat – and thereby gain an entrepreneurial advantage.*

**Perrin Beatty** Chair, Public Sector Advisory Board  
President and CEO of the Canadian Chamber of Commerce



From improving the way we care for the chronically ill, to the leading edge in medical discoveries, to safer bridges and structures that will increase safety and save valuable tax dollars, to encouraging preventive strategies that improve the well being of all members of society, to training more than 36 000 highly qualified Canadians, to fuelling thousands of commercial opportunities, companies and patents, **CHANGES ARE AN NCE OR CENTRE HAS BENEFITED YOUR LIFE IN CANADA.**

**IRIS** —

- Hexavision
- Innovmetric
- Wavemakers
- Atamai
- IGO Technologies Inc.
- Motion Metrics BC
- Syscor
- VisImage
- Intrignia Solutions Inc.
- PhoeniX Technologies Inc.
- Teneon Technologies
- Apstat Technologies Inc.
- Palomino Innovations
- RealContact Inc.
- Cyberhaptix Inc.
- Xuuk Inc.
- Precision MicroDynamics Inc.
- Techné Knowledge Systems Inc.
- Actenum
- Cortex Machina
- Credo Interactive Inc.
- Immersion Canada
- Infusion Systems Ltd.
- Mercator Robotec Inc.
- Xcert International Inc.
- LocusDialog
- Point Grey Research Inc.
- EK3 Technologies Inc.
- Axonwave
- Bionic Technologies
- Web of Research

**SCN** —

- Aggregate Therapeutics Inc.
- Coregen
- InSception BioSciences
- StemPath Inc.

**CGDN** —

- Ellipsis Biotechnology Solutions by Sequence Inc.
- Genexyn Pharmaceuticals Inc. (BC)
- Apoptogen Inc.
- EcoGenix Inc.
- Xenon

**CIPI** —

- Incise Photonics
- Lenolux
- InoMetrics Inc
- ExOptx
- Canoe Medical Lasers Inc.
- CEMS
- Attodyne
- Molecular Printing Press
- Aspreva Pharmaceuticals
- Spectral Consulting
- Femtonics
- BandGap Photonics
- DiCOS Technologies

**CSN** —

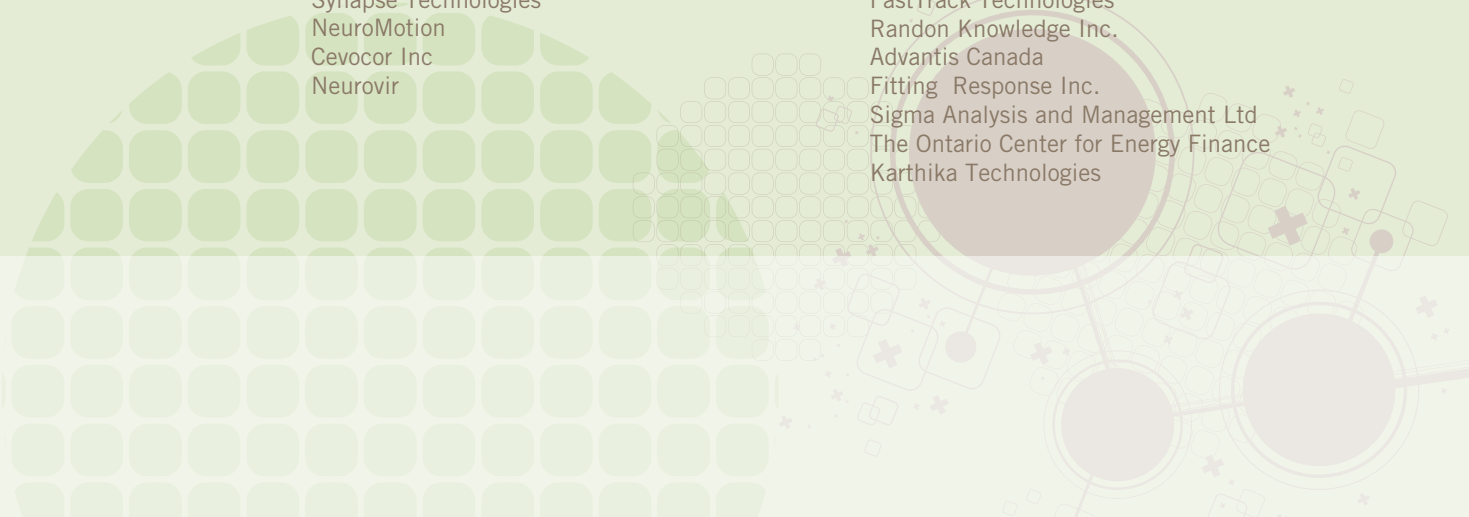
- Phoenix BioPharmaceuticals, Inc.
- Stem Cell Therapeutics
- NoNO Inc.
- Edge Therapeutics

**NeuroScience** —

- Exogen
- Neurosphere
- Synapse Technologies
- NeuroMotion
- Cevacor Inc
- Neurovir

**MITACS** —

- MiOPT
- ExPretio Technologies
- FastTrack Technologies
- Randon Knowledge Inc.
- Advantis Canada
- Fitting Response Inc.
- Sigma Analysis and Management Ltd
- The Ontario Center for Energy Finance
- Karthika Technologies



# MOBILIZING RESEARCH EXCELLENCE: PROGRAMS



*Excellence has no fixed address... It's part of the way in which Canada works in education, health care and social programs that these kinds of collaborations in scientific research are natural, and the NCE program is the glue that binds it together.*



**Arthur May**

Former NSERC President



*The NCE program can enhance the quality of science by enabling researchers of different disciplines to work in parallel on projects that we couldn't otherwise have attempted.*



**Dr. Michael Smith**

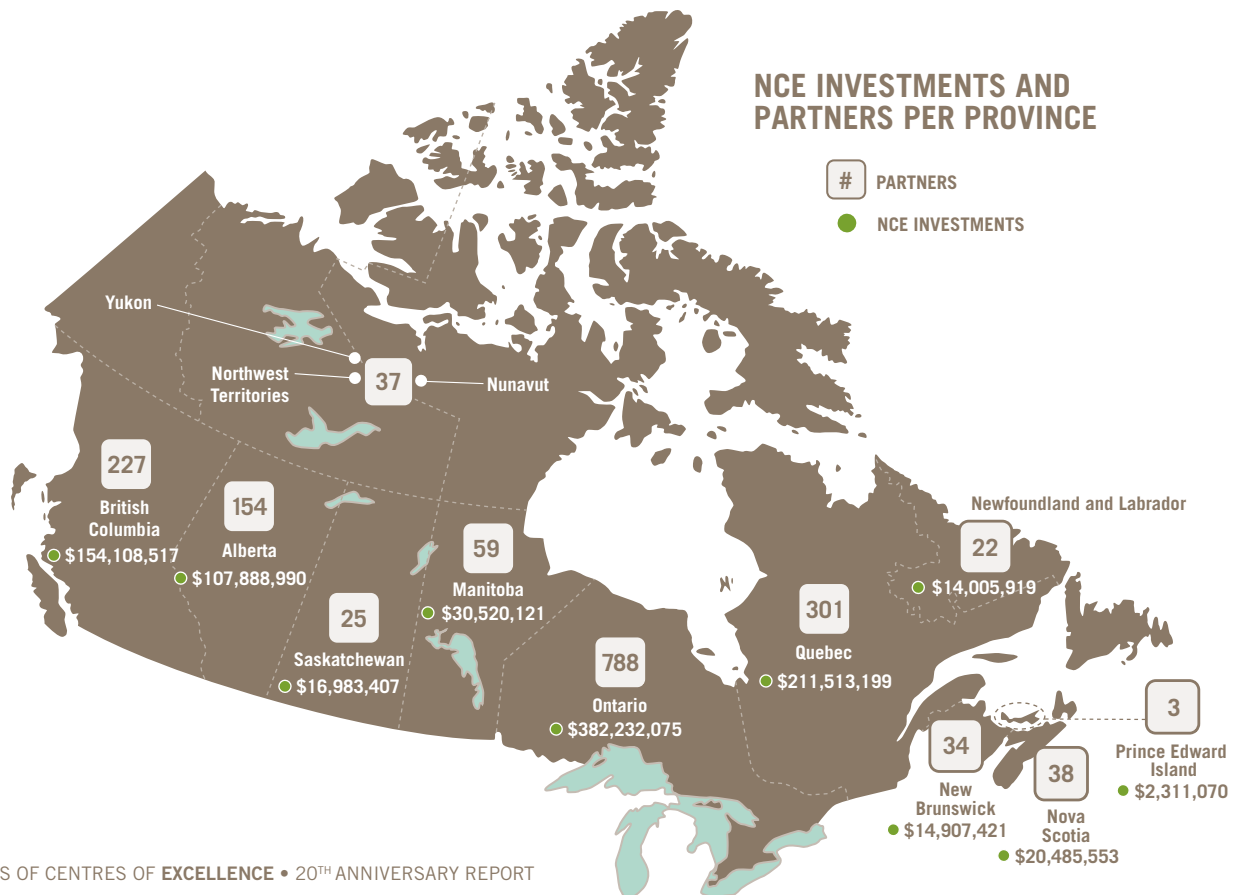
Canadian Nobel Laureate

Over the course of 20 years, the NCE program has fostered the concept of collaboration to accelerate knowledge translation. Since then, the NCE has developed academic networks focused on advancing Canadian knowledge through a collective approach. The benefits of these collaborations not only accelerated research in the past, but continue to resonate internationally.

With an eye to the future, the NCE continues to break new ground through the expansion of its suite of programs focusing on research partnerships, training, knowledge translation and application in the areas of health, commercialization and social well-being.

## THE NETWORKS OF CENTRES OF EXCELLENCE

The Networks of Centres of Excellence program harnesses the creativity and inventiveness of Canadian scientists and researchers in the natural, social, health and engineering sciences, to position Canada as a truly innovative nation. The networks unite Canada's academic, corporate, public and not-for-profit sectors and focus on issues critical to Canadian industry and society. For more than 20 years, the NCE program has successfully brought together the best minds in many disciplines and sectors to find solutions to critical issues for Canadians. The networks are leading the world in new research in diverse fields from stroke treatment, to managing Canada's natural resources, to information technology for complex systems in industry. The networks provide an internationally competitive environment for Canadian researchers and students to work together with user sectors, and accelerate the exchange of knowledge and transfer of new technology to private sector and other user communities. These are academic-led networks focusing on emerging research areas at the boundaries of current knowledge, and crossing several discipline areas.



## BUSINESS-LED NETWORKS OF CENTRES OF EXCELLENCE

R&D creates jobs, improves the quality of life for all Canadians, and builds a more diverse and resilient economy over the long term.

In 2007–08, the Government of Canada moved to build on the NCE program's solid foundation by investing \$46 million over four years in new Business-Led networks. A hybrid of the NCE program's academic perspectives and the eagerness of the private sector to solve specific problems, the Business-Led Networks are, as the title suggests, headed by industrial consortia. These new collaborative networks will help increase private sector investments in research in Canada, support the training of skilled researchers and accelerate the timeline involved in transferring ideas from the laboratory to products and services in the marketplace.

Selected through a rigorous competitive process, the currently funded Business-Led networks focus on innovative tools for drug discovery, nanotechnology-enhanced forestry products, next-generation aviation technologies and sustainability challenges relating to hydrocarbon production.

*The Business-Led Networks and Centres of Excellence for Commercialization and Research have mobilized their industrial partners despite the economic downturn, including a multi-million dollar partnership in the health and life sciences field.*

## CENTRES OF EXCELLENCE FOR COMMERCIALIZATION AND RESEARCH

In 2007, the Government of Canada invested approximately \$285 million over five years to create the new Centres of Excellence for Commercialization and Research program. This initiative creates world-class centres to advance research and facilitate the commercialization of technologies, products and services in the four priority areas identified in the federal S&T Strategy. Building on the success of the original NCE program which funds research, the CECR program supports the operating expenses of a centre, and the

commercialization of such research to ensure maximum return on research and development dollars.

To date, 17 successful initiatives have been launched. They were chosen by international peer review and with advice from the private sector. Each centre brings together people, services and infrastructure to maximize the benefits of the government's investment in skills and research. They also encourage private sector investment.

## INDUSTRIAL RESEARCH AND DEVELOPMENT INTERNSHIPS

In the new global economy, there is an ever-increasing need in the private sector for graduates whose ingenuity and innovation can keep Canada in the vanguard of competitiveness. To compete and win through the application of new technologies and innovative solutions, Canadian businesses need to increase Science and Technology (S&T) investments and hire more science and technology graduates seasoned with industrial perspectives. The IRDI Program aims at creating additional opportunities for skilled graduate students and post doctoral fellows by linking them with businesses that can utilize their talents. By doing so, the program will increase the S&T activities of businesses while creating new opportunities for S&T jobs for highly qualified personnel.

The goal of the IRDI Program is to introduce graduate students and post-doctoral fellows to practical business problems and provide them with the opportunity to apply their scientific and technical expertise to address the needs of participating businesses, as well as to create a vehicle that will facilitate increased private sector investment in R&D. The IRDI program has delivered over 500 internships across Canada over the past year and is expected to reach up to one thousand internships annually.

*In 2008-2009 Mitacs Accelerate approved over 600 internships and partnered with more than 400 companies. This is a 155% increase to the previous fiscal year.*

## PRIVATE SECTOR ADVISORY BOARD

PSAB is a new tri-council private-sector advisory board for the granting councils that provides advice on the implementation of business-driven Networks of Centres of Excellence, Centres of Excellence for Commercialization and Research, and the college initiatives.

### CHAIRMAN

**The Honourable Perrin Beatty**  
President and Chief Executive Officer  
Canadian Chamber of Commerce

### MEMBERS

**Suhayya (Sue) Abu-Hakima**  
Co-Founder, President /CEO  
Amika Mobile Corporation

**Jim Carter**  
Former Corporate Director & President  
& COO Syncrude Canada Ltd

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Vice-président, ingénierie  
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Bio-detection  
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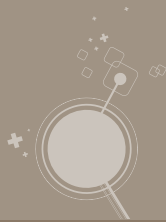
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Day4Energy

**Kevin O'Brien Fehr**  
Director, R&D Alliances  
GlaxoSmithKline Inc.

**Keith Stoodley**  
Senior Vice-President of Marketing  
Provincial Aerospace Ltd  
St. John's International Airport

# NCE RETROSPECTIVE:

20 years



From improving the way we care for the chronically ill, to the leading edge in medical discoveries, to safer bridges and structures that will increase safety and save valuable tax dollars, to encouraging preventive strategies that improve the well being of all members of society, to training more than 36 000 highly qualified Canadians, to fuelling thousands of commercial opportunities, companies and patents, **CHANCES ARE AN NCE OR CENTRE HAS BENEFITED YOUR LIFE IN CANADA.**

2003

- Two new networks announced: ArcticNet; and Advanced Foods and Materials Network (AFMNet) – \$84,756,000 for 2003-2011.

2004

- Allergy, Genes and Environment Network (AllerGen) announced – \$22,193,000 for 2004-2009.
- Four networks renewed for second seven-year funding cycle: CAN; CIPI; GEOIDE; and MITACS – \$122,148,000 for 2005-2012.

2005

- PrioNet Canada (PrioNet) network announced – \$35,796,000 for 2005-2012.
- CSN renewed – \$44,400,000 for 2006-2012.

2006

- NCE-NI Pilot created – Five NCE New Initiatives (NI) announced: Canadian Obesity Network (CON); National Initiative for the Care of the Elderly (NICE); Promoting Relationships to Eliminate Violence Network (PREVNet); Canadian Design Research Network (CDRN); and Emerging Dynamic Global Economies (EDGE) – \$5,950,000 for 2005-2009.
- International Partnership Initiative (IPI) pilot program created – award goes to seven networks.

2007

- Three networks renewed for second seven-year funding cycle: AUTO21; CWN; and SCN – \$117,544,490 for 2008-2015.
- Budget 2007 announced launch of three new programs: Centres of Excellence for Commercialization and Research (CECR); Business-Led NCEs (BL-NCE); and Industrial Research and Development Internships (IRDI) with a combined investment of \$273,821,983.

2008

- 11 new CECRs announced: Advanced Applied Physics Solutions Inc. (AAPS); Bioindustrial Innovation Centre (BIC); Centre for the Commercialization of Research (CCR); Centre for Drug Research and Development (CDRD); Centre of Excellence in Personalized Medicine (CEPMed); Centre for Probe Development and Commercialization (CPDC); Institute for Research in Immunology and Cancer – Commercialization of Research (IRICoR); MaRS Innovation (MI); Prostate Centre's Translational Research Initiative for Accelerated Discovery and Development (PC-TRIADD); Pan-Provincial Vaccine Enterprise (PREVENT); and Prevention of Epidemic Organ Failure (PROOF) – \$163,360,750.
- IRDI grant awarded to Accelerate Canada.

2009

- Six new CECRs announced: Centre of Excellence in Energy Efficiency (C3E); Canadian Digital Media Network (CDMN); Centre for Surgical Invention and Innovation (CSII); GreenCentre Canada (GCC); Oceans Network Canada Centre for Enterprise and Engagement (ONCEE); and Tecterra – \$62,510,760.
- Four BL-NCEs announced: Canadian Forest NanoProducts Network (ArboraNano); Green Aviation Research and Development Network (GARDN); Petroleum Technology Research Centre (PTRC-STEPS); and the Québec Consortium for Drug Discovery (CQDM) – \$39,310,473.

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