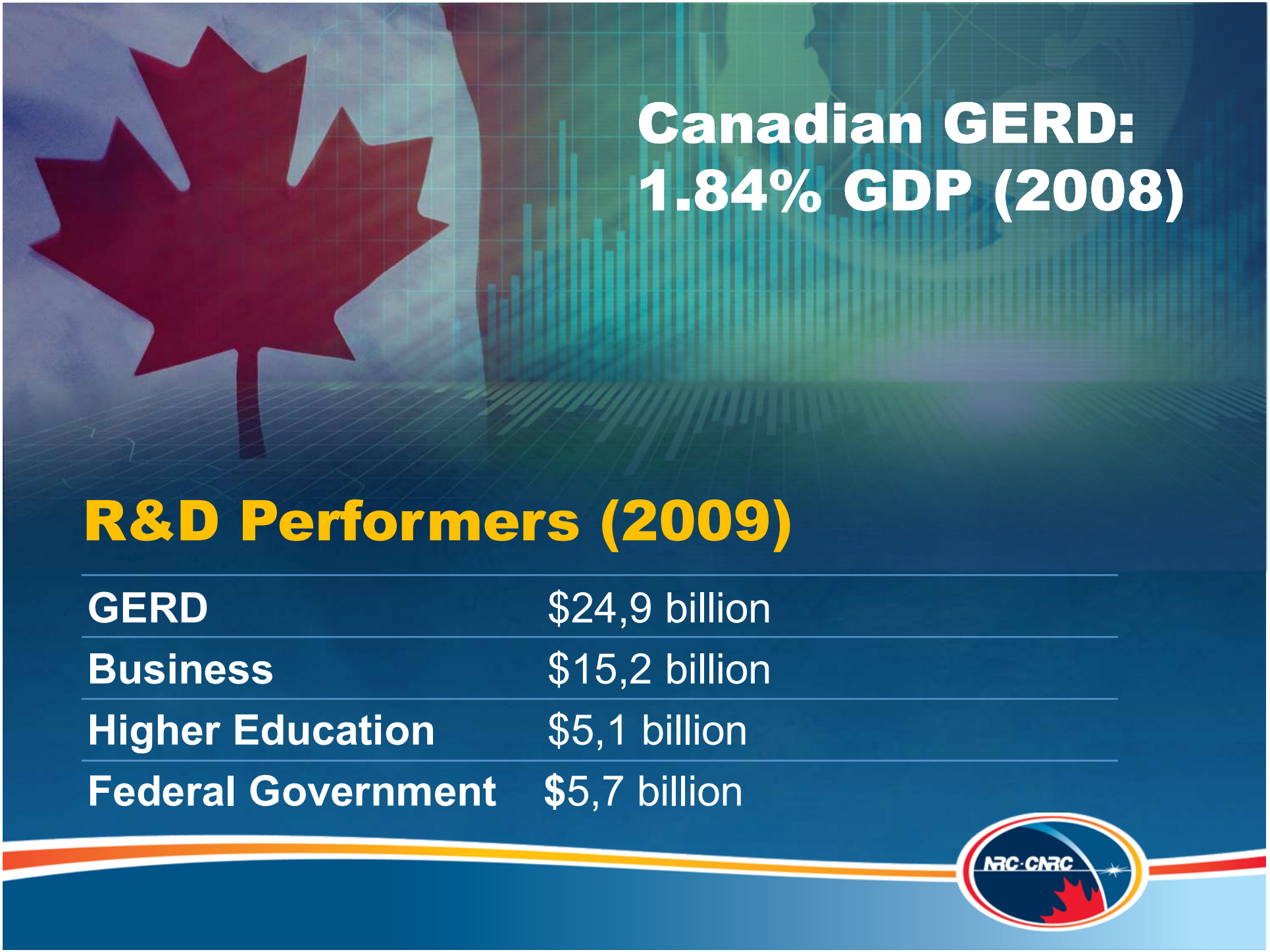
National Research Council Canada

John McDougall, President

10th Annual Re$earch Money Conference, 11 May 2011

National Research Council Canada | Conseil national de recherches Canada

Canada



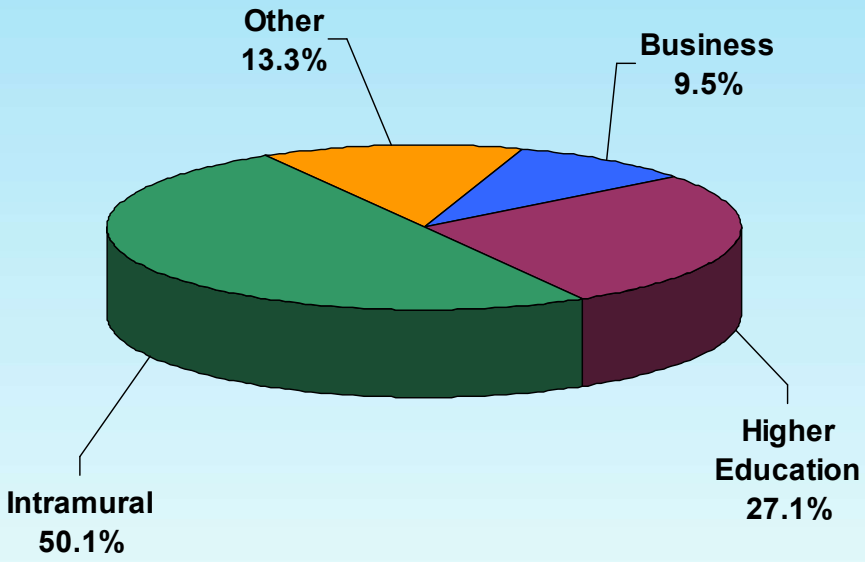
Canadian GERD: 1.84% GDP (2008)

R&D Performers (2009)

GERD	$24,9 billion
Business	$15,2 billion
Higher Education	$5,1 billion
Federal Government	$5,7 billion

Federal Expenditures on S&T

Overall the Government directly spent $11.7B on S&T and provided $3.5B of tax credits



Key programs in support of **higher education** research include:

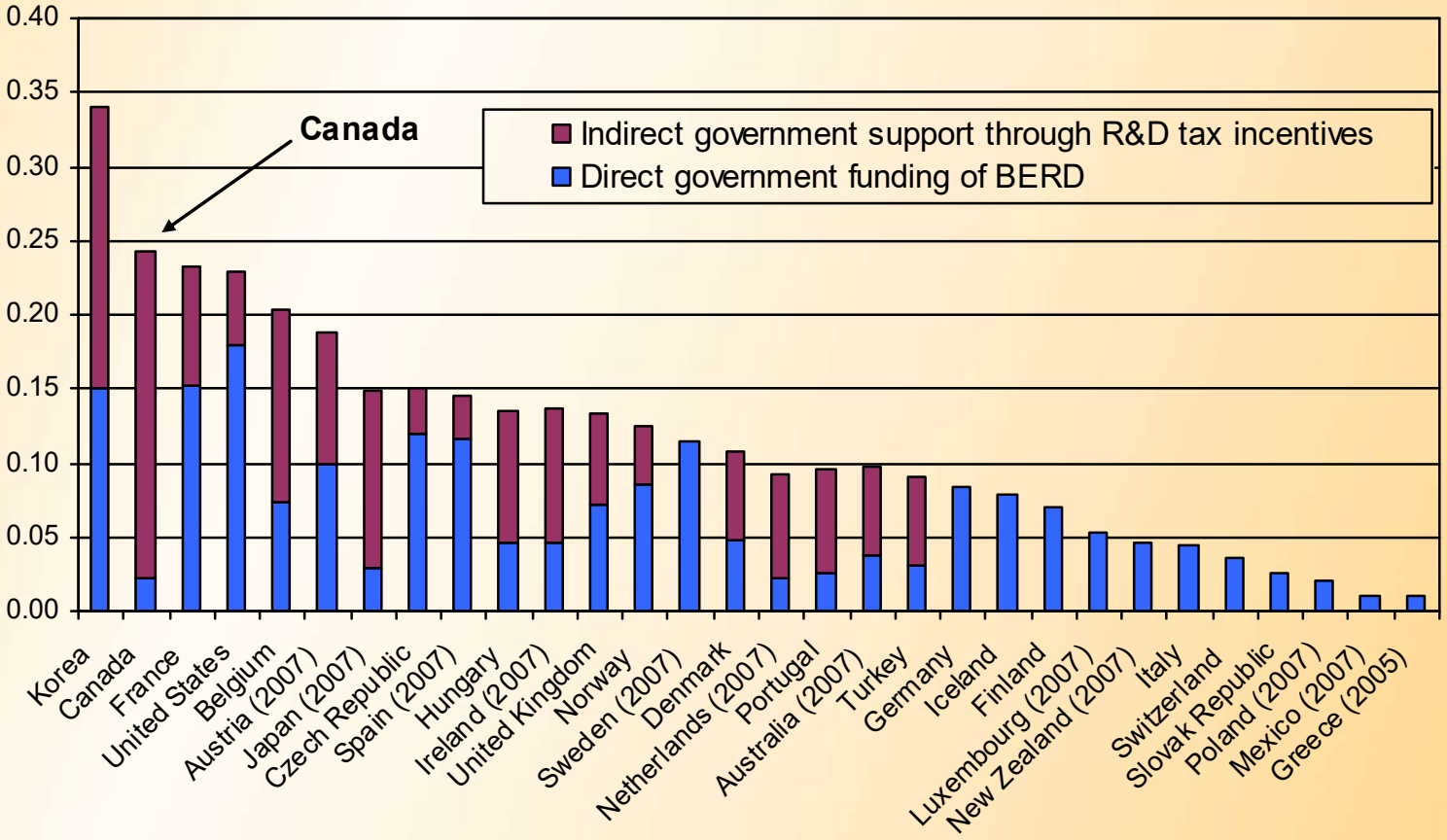
- Granting Councils Programs (NCEs, CRC, ICP)
- Canada Foundation for Innovation funding for research infrastructure
- Genome Canada

Key programs in support of **business R&D** include:

- The Scientific Research & Experimental Development (SR&ED) Tax Credit
- National Research Council's Industrial Research Assistance Program (IRAP)
- Strategic Aerospace and Defence Initiative (SADI)
- The Business Development Bank of Canada (BDC)
- Granting Council innovation programs
- Tri-Council partnership programs

Government Support for Private R&D

Direct and indirect government funding of business R&D and tax incentives for R&D, 2008 (as %age of GDP)



Source: OECD, Science, Technology and Industry Outlook 2010.

RTOs advance technology

Research and Technology Organizations (RTOs) use market-based business models to help companies create value through:

- Stimulating business investment in R&D
- Adding value to research investments

Public Interest

- Serve as an agent of economic development

Industry and market driven

- Business like, deployment oriented

Specialized people and unique facilities

- Mission oriented

Fill gap between academic research and industry

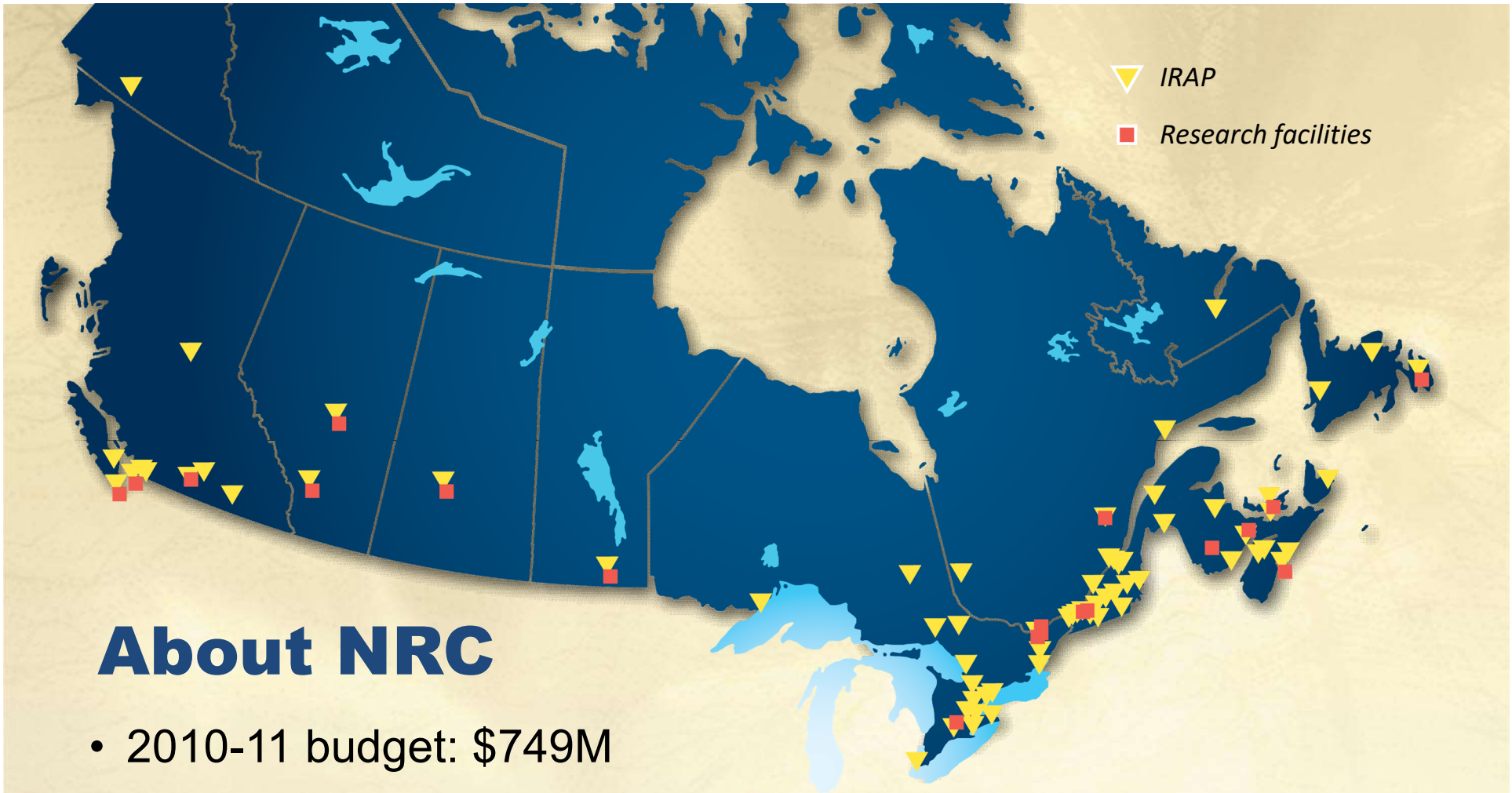
- Strategic and applied research, technical services and commercialization support

NRC VISION

To be the most effective research and technology organization in the world, stimulating sustainable domestic prosperity.

NRC MISSION

Working with clients and partners, we provide strategic research, scientific and technical services to develop and deploy solutions to meet Canada's current and future industrial and societal needs.



About NRC

- 2010-11 budget: $749M
- Over **4,000** employees and **1,500** visiting workers
- Wide variety of disciplines and broad array of services and support to industry.

NRC – a century of innovation to benefit the world

1920s
Concrete for a harsh climate

1930s
Redesigned steam locomotive

1940s
Wartime innovations: radar, atomic energy

1950s
Pacemaker, electric wheelchair

1960s
Crash position indicator

1970s
Anti-counterfeiting technology

1980s
Canadian Astronaut Program, Canadarm

1990s
Synthetic meningitis C vaccine

2000s
Simulated brain surgery

NRC·CNRC

Addressing major issues for Canada

Pressures on natural resources

Climate change and the environment

Growing health care pressures

Increasingly complex security challenges

Changing sense of communities

Economic growth and sustainability

NRC business lines

NRC's programs, activities and facilities organized along four business lines:

1. **Strategic Research & Development**
   Helping industry and government address national priorities through mission-oriented research and technology development, including frontier science

2. **Technical Services**
   Helping clients solve immediate problems associated with the adoption and use of technology by offering services such as testing, certification, calibration, prototyping, demonstration, scale-up and consulting

3. **NRC-IRAP**
   Supporting innovation activities – and helping build the innovation capacity – of Canadian small and medium-sized enterprises by providing them with advisory services and financial support

4. **Scientific Infrastructure**
   Helping clients make the most of specialized Canadian scientific infrastructure

Strategic R&D: New solutions for producing clean energy

Biofuels from marine algae

Institute for Marine Biosciences → **Plant Biotechnology Institute** → **Institute for Aerospace Research**

Identify most suitable strains and growing conditions

Genetically enhance needed properties of algae

Ensure fuel produced from algae can power jet engines

Technical Services : De-risking Technology & Investment, Enabling Commercialization

NRC-Canadian Photonics Fabrication Centre (CPFC) facilitates the commercialization and de-risking of photonic technology and investment by providing a world class facility that bridges the gap from innovation to product

The Context

- Downturn of the optical telecom industry
- Diversification of the photonics industry
- Creation of large number of SMEs
- Investment community becomes risk adverse

Alignment of the NRC Photonics Program with Industry

•Major force in preserving Ottawa high tech sector
•Provides critical support to entrepreneurs
•Helps anchor, establish business & research programs in Canada

NRC Industrial Research Assistance Program

NRC-IRAP rated #1 program in Canada in terms of support for commercialization of science and technology*

- Worked with 8,578 SMEs in 2009-2010
  - 2,871 received some form of funding
- Direct support to clients - $264.2M in 2010-11

*The State of Science and Technology in Canada, Canadian Council of Academics

NRC is a strong supporter of private sector R&D

•NRC plays a critical role and has proven ability to make major contributions to regional and national innovation through market based work with companies

- Outcome Based Collaboration
- De-risking R&D through Collaborations
- Technical Services / Equipment Access
- Direct Support to firms via NRC-IRAP

Discussion

Thank you