

NSERC Investments

Newfoundland and Labrador



\$13.7 million

NSERC Investments in Newfoundland and Labrador (2009-10)

\$1 billion

Government of Canada Investments through NSERC (2009-10)

The Natural Sciences and Engineering Research Council of Canada (NSERC) is a federal agency that helps make Canada a country of discoverers and innovators for all Canadians. NSERC maximizes the value of the Government of Canada's investments in research by promoting **research-based innovation**, university-industry partnerships and the **training of people** with the scientific knowledge and business skill set to create wealth from **new discoveries in science and engineering**.

226

NSERC-funded Professors

7

Industrial Partners in the Province

\$410,000

Industrial Contributions
by these Partners

111

NSERC Awards to Students and Fellows

12

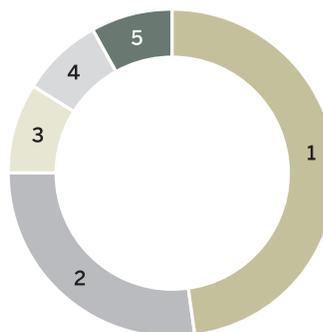
NSERC-supported Research Chairs

For more information, visit
www.nserc-crsng.gc.ca

NSERC Investments in Newfoundland and Labrador, by Federal S&T Priority Area

Total \$10.5 million (Excludes Scholarships and Fellowships)

- 1 | Environmental Sciences and Technologies
48%
- 2 | Natural Resources and Energy
27%
- 3 | Manufacturing
9%
- 4 | Health and Related Life Sciences and Technologies
8%
- 5 | Information and Communications Technologies
8%





Impacts and Investments

Map Making in the Web 2.0 Era

Social media tools are making it possible for anyone to engage in map making, while new research is creating a system for communicating the quality of this information.

Rodolphe Devillers, a geography professor at Memorial University of Newfoundland, is researching the impact of geographic information contributed by volunteers and the growth of free geographic data sets. In the past, government and industry produced all of the geospatial information available because only they had the resources to gather the vast amounts of information. Today, social media tools make it possible for anyone to do it. Devillers' research will explore ways of judging these free data sets and developing a rating system to communicate the quality of the data to users. Over the next five years, Dr. Devillers will receive **\$290,000** in new NSERC discovery research support, including a prestigious NSERC Discovery Accelerator Supplement.

Making Offshore Oil Drilling Safer and Stronger

Research into offshore oil and gas operations will help make offshore drilling safer — protecting the lives of workers and the health of the environment.

Canada's significant offshore oil and gas resources are a source of jobs, growth and energy that are vital to the economy. The Offshore Technology Research Training Program is an applied research effort headquartered at Memorial University of Newfoundland that focusses directly on problems and challenges facing the industry. A variety of partners — from resource companies to professional associations — will help to provide a highly trained workforce to maintain Canada's competitive advantage. The initiative, led by Dr. Wei Qiu, will receive **\$1.65 million** in support over six years through NSERC's Collaborative Research and Training Experience Program.

“Canada’s oceans are hugely important for our economy and environmental health, but their vastness and complexity create a critical need for an academic and government research partnership. The NSERC Strategic Network partnership has created a unique opportunity to gather a geographically scattered community of ocean researchers under one umbrella that is the envy of our colleagues abroad. A wonderful opportunity for researchers today, but the oceans of tomorrow will be the ultimate beneficiary.”

Dr. Paul Snelgrove
Canada Research Chair in Boreal and Cold Ocean Systems
Memorial University of Newfoundland

Newfoundland and Labrador



Maintaining Biodiversity in Cold Oceans

As a signatory to the International Convention on Biological Diversity, Canada is committed to developing an inventory of its biodiversity and to preserving these resources. Within the marine environment, our understanding of the processes that regulate and maintain biodiversity is very limited, and even less is known about cold ocean ecosystems.

Memorial University of Newfoundland oceanographer and Canada Research Chair Paul Snelgrove addresses this shortcoming by focussing on early life history stages of species and the processes that influence success, failure and the resultant pattern of biodiversity. His NSERC-funded research is centred primarily in coastal Newfoundland, in a variety of habitats that include a diverse mix of temperate and Arctic species. Dr. Snelgrove also leads the NSERC-funded Canadian Healthy Oceans Network, a pan-Canadian initiative of more than 50 researchers engaged in the broad themes of marine species diversity, ecosystem function and population connectivity. NSERC is making a five-year **\$5 million** investment in the Network. Plus, Fisheries and Oceans Canada and ArcticNet Inc. are contributing \$2 million of in kind support.

Reducing the Risk in Aquaculture

Aquaculture has become an important industry and employer in coastal areas of rural Canada, but to remain competitive it needs to diversify and raise new species.

One potential candidate is Atlantic cod. According to Memorial University of Newfoundland ecologists Ian Fleming and Craig Purchase, a key issue that needs to be addressed before cod farming practices become standard is the challenge of escaping fish, which has plagued salmon farms. In collaboration with the Fish, Food and Allied Workers Union and Fisheries and Oceans Canada, they are engaged in a comprehensive study of all possible interactions between caged cod and wild populations. The goal of the research is to develop the means to assess risk and identify mitigation measures. The knowledge gained will reduce the potential ecological effects of escaped fish and help Canada respond to the science and policy challenges presented by the growth of the aquaculture industry. NSERC is investing **\$443,800** in this Strategic Project over a three-year period. Partner contributions add up to **\$161,200** of in kind and direct support.

Institutions

1. **Memorial University of Newfoundland**
\$10.6 million
2. **College of the North Atlantic**
\$155,000

Newfoundland and Labrador



Technology and Services for Northern Monitoring

Promoting the growth of Canada's Earth observation sector will help to not only create jobs in that industry, but also develop northern resources sustainably, thus creating many other jobs for Canadians.

The LOOKNorth centre of excellence is an initiative of C-CORE, a Canadian research and development corporation at Memorial University of Newfoundland. The centre will enable industry and research partners to build on Canada's monitoring technologies industry, helping to ensure safe and sustainable resource development in remote, challenging and environmentally sensitive northern regions. LOOKNorth will assist small and medium-sized businesses by defining industry needs, developing business cases for new technologies that address those needs, supporting technological development, and generating opportunities to secure markets. LOOKNorth is one of five new centres funded in 2010 through the Centres of Excellence for Commercialization and Research Program, which is administered by the Networks of Centres of Excellence Secretariat on behalf of Canada's three federal granting agencies. NSERC is contributing **\$5.7 million** of the **\$7.1 million** in federal funding for the five-year program.

Some of NSERC's Newfoundland and Labrador-based Partners (2010-11)

Altius Resources Inc.
Corner Brook Pulp and Paper Ltd.
IDBlue
Mad Rock Marine Solutions Inc.
Nalcor Energy
Tiller Engineering Inc.

For more information, visit
www.nserc-crsng.gc.ca

Healthier Fish

William Driedzic, who holds Memorial University of Newfoundland's Canada Research Chair in Marine Bioscience, is an internationally recognized zoologist in the field of fish physiology who studies how fish deal with environmental challenges such as low temperature and oxygen limitation.

The findings have direct implication in aquaculture for such issues as rearing temperatures, minimum oxygen levels and appropriate nutrients. NSERC's five-year support for Driedzic's Chair and Discovery Grant research totals **\$785,900** this year.