

# NRC Technology Cluster Initiatives

## COMMUNITY INNOVATION, ECONOMIC GAIN

**T**hrough dynamic and rapidly growing technology cluster initiatives, the National Research Council advances world-class R&D in collaboration with Canadian communities. Using its research facilities as hubs for community innovation, NRC works with universities and industry to inject local drive into the Canadian economy.



## Newfoundland and Labrador—Ocean Technology

NRC is nurturing a vibrant cluster initiative of public and private organizations in Newfoundland and Labrador to capture a sizeable portion of a global ocean technology market worth \$1.8 trillion. By positioning its pioneering NRC Institute for Ocean Technology as a hub for the community's groundbreaking R&D activities, NRC serves as both cluster initiative catalyst and mentor—it encourages key players to work collaboratively toward critical common

goals, and it affords the cluster's roughly 50 small and medium-sized companies an opportunity to prototype and incorporate new technologies using NRC expertise and facilities.

### Uniting key players

The momentum behind the cluster's impressive growth stems from a broad-based collaborative initiative involving NRC, all levels of government, local businesses, industry groups and Memorial University of Newfoundland. An NRC-initiated roundtable in 2000 attracted 85 ocean technology stakeholders, resulting in the development of a bold action plan that has enabled the community to identify key strategies and goals for cluster development. Here are some key initiatives that have sprung from the roundtable:

- NRC's Industrial Research Assistance Program (NRC-IRAP), with the collaboration of several stakeholders, helped to establish the influential private sector ocean technology cluster development forum, OceansAdvance. Oceans-Advance facilitates collaboration among industry stakeholders, builds the community's R&D capacity,



expands lucrative business and export opportunities and identifies the industry's most promising investment prospects.

- NRC has established a new \$6.5 million industry partnership facility at its research complex in St. John's. The facility, which transfers research from NRC labs to vibrant start-up companies, now houses five pioneering firms and also operates a technology incubator that houses four more.
- The City of St. John's launched a nationwide advertising campaign that branded the city as *Canada's Centre of Ocean Excellence*. This campaign has helped St. John's attract top talent and investment from across the country.
- The St. John's Board of Trade partnered with the City of St. John's to establish Ocean Industries Week, which highlights the economic importance of ocean industries and draws attention to the strategic importance of St. John's as a centre of excellence in the field.

## Commercializing research

One of NRC's goals is to encourage collaborative R&D that puts federal research to work in the private sector. Significant strides have come in recent years: in 2004-2005 alone, the value of NRC's collaborative agreements with stakeholders in the St. John's cluster initiative tripled to nearly \$9.1 million – or about \$2.9 million annually.

# Transforming technology into business

NRC offers strategic services to businesses that wish to take their innovations to market—helping small businesses succeed.

## Assisting with industrial research

The NRC Industrial Research Assistance Program (NRC-IRAP)— a national program aimed specifically at assisting small and medium-sized businesses—contributes technical expertise and funding to all NRC cluster initiatives. In Newfoundland and Labrador, NRC-IRAP has helped bring promising technologies closer to commercial success by supporting key cluster players such as NavSim Technology Inc., Trans Ocean Gas, Blue Ocean Satellite System, ICAN Ltd. and Lotek Wireless Inc.

“The ocean technology cluster is catalyzing companies in Newfoundland and Labrador to build individual strengths into powerful collective efforts. More and more, the industry is assuming strategic leadership for the sector. The province sees this sector as a major element of its new economy.”

L.G. O'Reilly, Executive Director, OceansAdvance

| NRC CLUSTER INITIATIVE PARTNERS   | CLUSTER FACTS AT A GLANCE  |
|---|--|
| <ul style="list-style-type: none"><li>• Province of Newfoundland and Labrador</li><li>• OceansAdvance</li><li>• City of St. John's</li><li>• St. John's Board of Trade</li><li>• Memorial University of Newfoundland, including the Fisheries and Marine Institute</li><li>• Atlantic Canada Opportunities Agency (ACOA)</li><li>• Newfoundland and Labrador Association of Technology Industries</li><li>• Newfoundland Ocean Industries Association</li><li>• Petroleum Research Atlantic Canada</li><li>• Canadian Centre for Marine Communications</li><li>• C-CORE</li></ul> | <ul style="list-style-type: none"><li>• Ocean-related economic activities comprise 25% of Newfoundland and Labrador GDP. The ocean technology's component of this figure is growing at twice the rate of the remaining components.</li><li>• Ocean industries contribute \$20 billion and 350,000 jobs to the Canadian economy annually.</li><li>• St. John's is home to roughly 50 ocean technology companies.</li><li>• The world market for ocean technologies is \$1.8 trillion and growing at a rate of 2.5% annually.</li><li>• NRC's \$6.5 million industry partnership facility houses 10 companies.</li></ul> |



## Best available science and technology literature

NRC is a world leader in electronic publishing, and Canada's largest and best resource for scientific, technical and medical information. NRC's information specialists are highly active in the St. John's ocean technology cluster initiative, offering clients access to the same top-notch document-delivery services that NRC scientists enjoy.

Since April 2002, NRC has expanded its professional team in the ocean technology cluster initiative, improving its ability to fulfill stakeholders' requests for information. Services include a weekly ocean technology newsletter and services designed specifically for companies housed at NRC's industry partnership facility.

### MILESTONES FOR COMMUNITY ENGAGEMENT

2000—NRC and Industry Canada launch Technology Roadmap exercise

2001—St. John's roundtable attracts 85 participants from industry, academia, various agencies and all three levels of government

2001—NRC acquires \$20 million in new federal funding for its Institute for Ocean Technology

2002—NRC-IRAP spearheads the creation of OceansAdvance, a public-private joint venture that aims at making St. John's an international location of choice for ocean technology

2002—NRC organizes \$60 million Ocean Partners Investment Fund and trade mission to Ireland

2003—NRC opens an industry partnership facility in St. John's

2004—NRC announces BioSeas Partnership

2005—Cluster champion OceansAdvance is incorporated

2005—NRC-IRAP, the Atlantic Canada Opportunities Agency and the Government of Newfoundland and Labrador launch New England Trade Initiative concentrating on ocean technology

2005—NRC's Ocean Technology Enterprise Centre graduates its first two companies

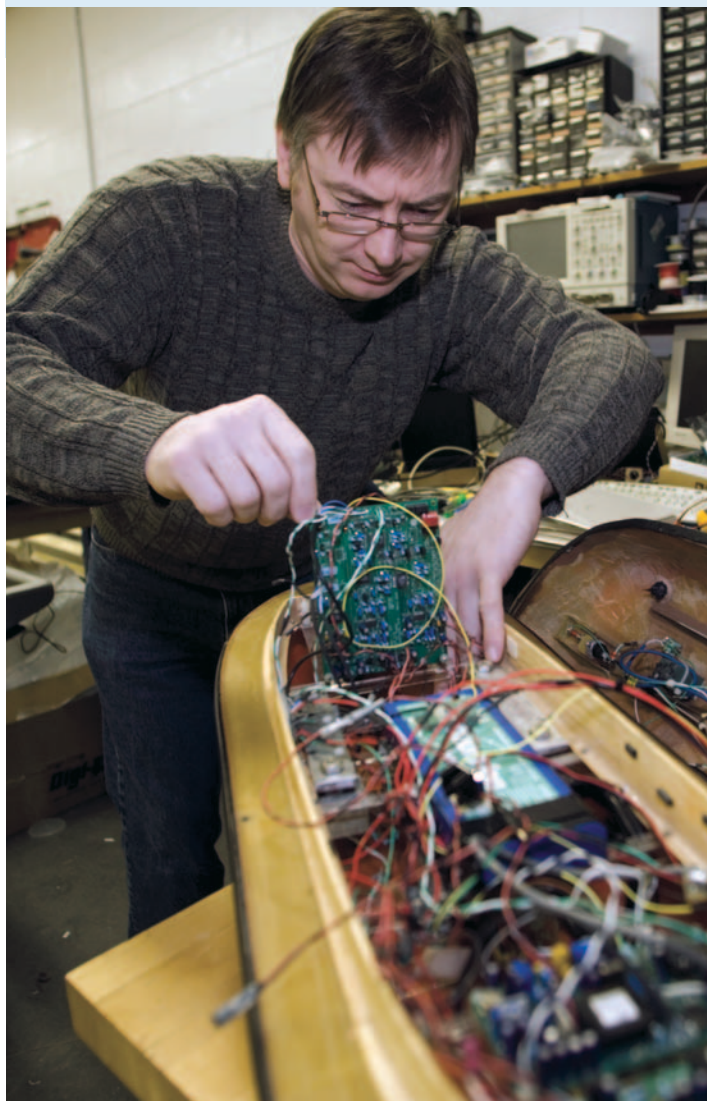
2006—OceansAdvance signs an MOU with the Marine and Oceanographic Technology Network, a U.S. business development association

“NRC's work in ocean technology has been instrumental in positioning St. John's as a centre of ocean excellence. With a common vision and purpose, we are experiencing progress and are poised for even greater development in this sector. The City anticipates considerable benefit from our ocean technology community for many years to come.”

Andy Wells, Mayor, City of St. John's

### WORLD-LEADING CLUSTER

Although knowledge-intensive ocean technology companies are located throughout the province, more than 40 are located near NRC facilities in St. John's, securing the city's position as one of the world's most important emerging ocean technology centres. NRC has made a \$20 million investment in the dynamic community to ensure its impressive start will be followed by substantial advances in R&D and the commercialization of federally funded research.



### MAPPING A PROMISING FUTURE

NRC and Industry Canada led a technology roadmap exercise in 2000, the outcome of which reflected the community's priorities in a cohesive, common plan. The roadmap identified four areas that hold special promise for ocean technology R&D in the Newfoundland cluster. Cluster stakeholders will concentrate on developing innovative technologies for:

- oil and gas services
- energy-efficient marine transportation
- eco-sensitive ocean harvesting, critical to maintaining sustainable fisheries and aquaculture
- climate and ocean monitoring

# NRC Technology Cluster Initiatives

## GLOBAL REACH—LOCAL TOUCH

NRC has played a critical role in the development of emerging and mature cluster initiatives, acting as a catalyst for technological progress and economic growth in every region of Canada. Its successful clustering model encourages and supports local strengths while leveraging NRC's national and international resources, science and technology capabilities, networks and partnerships. This proven approach ensures that each cluster initiative can develop according to its unique needs, opportunities and challenges.

### Committed leadership

Successful cluster initiatives need staying power, often taking decades to mature. The building process must be community-driven and focused, and must have the support of effective networks and committed local champions.

For many years, NRC has distinguished itself as an effective catalyst for cluster initiative development, providing not only R&D expertise, but also the leadership clusters need to move research out of the lab and put it to work for Canada's economy.

NRC stimulates the growth of world-class technology cluster initiatives, putting its leading-edge research to work in innovative communities across Canada.



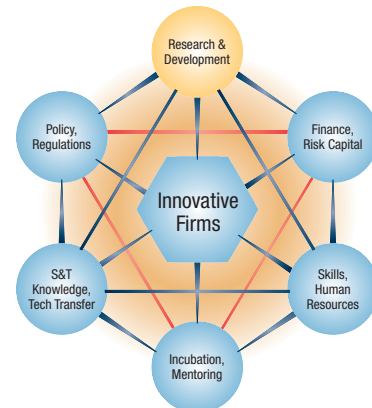
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## Delivering results

Clustering is a term economists have borrowed from science to describe the significant concentration of innovative companies around a nucleus of R&D facilities in a single locale—the ideal environment for innovation to flourish.

A key ingredient is the presence of a science and technology anchor—usually a government research institution or a university—able to work with local companies, transfer technology and spin off new enterprises.

Innovative, knowledge-based firms act as a magnet, attracting others with technical and business expertise to locate and invest in the area. Over time, partners grow into a critical mass of skilled people, capital and entrepreneurial drive.



## GREAT PEOPLE, GREAT MINDS

Recognized globally for cutting-edge research and innovation, the National Research Council helps Canada create a world-class, knowledge-based economy. NRC is home to nearly 4,000 creative and skilled people held in highest regard by their colleagues and collaborators worldwide. NRC employees have earned international acclaim for excellence and for winning innovations – their honours include a Nobel Prize, an Academy Award, and helping Canada capture Olympic Gold.

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