

NRC Technology Clusters

COMMUNITY INNOVATION, ECONOMIC GAIN

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



Winnipeg—Life sciences and medical devices

NRC's Winnipeg-based biomedical technology cluster is acknowledged internationally as one of the fastest-growing concentrations of medical devices and life sciences industries in Canada. The 150 health-related companies and organizations associated with Manitoba's life sciences cluster generate sales of more than \$440 million a year—a number that grows annually—and employ 4,200 people.

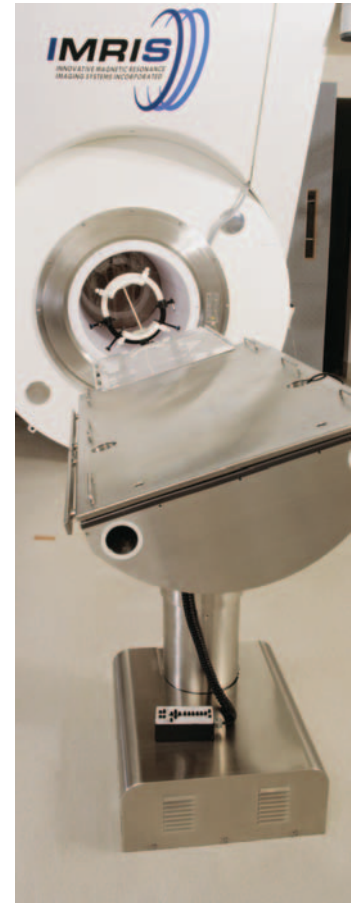
Impressive growth

Growth of the cluster has been steady since 1992, when NRC created its Institute for Biomedicine in a bid to advance Winnipeg's R&D capacity in medical devices and life sciences technology. At that time, the facility housed 25 NRC employees who conducted \$2 million worth of research annually. Since then, NRC's commitment to biomedicine research has driven an impressive surge in the facility's R&D capacity; currently, 200 researchers, staff, and affiliated collaborators are engaged in about \$15 million worth of R&D and technology transfer.

Moreover, the facility's revenues from collaborative research with private industry have, on an annual basis, grown substantially—an important measure of NRC's success as a cluster catalyst.

Successful technology transfer

Although the Winnipeg cluster is young, NRC's biomedicine researchers have transferred enough technology to private industry to create five separate technology spin-off companies—with an aggregate market value of over \$200 million. The largest of these is IMRIS Inc. formed in 1997 to commercialize NRC-developed intra-operative MRI systems.



NRC scientists collaborate closely with medical researchers and clinicians to ensure rapid technology transfer from the lab to medical practice. The results are improved health-care facilities in Canadian communities and increased economic value for Canada as new technologies become viable products in the global marketplace.

Commercialization a priority

In October 2005, NRC stepped up its contribution to Winnipeg's growing technology cluster by opening the NRC Centre for Commercialization of Biomedical Technology. The Centre is a key element of NRC's clustering strategy and considered by many as a model for public-private sector partnerships.



Transforming technology into business

NRC offers strategic services to businesses that are looking to take their innovations to market—easing the transition from small start-up company to bona fide industrial presence.

Assisting with industrial research

The NRC Industrial Research Assistance Program—aimed specifically at helping small- and medium-sized businesses develop technologies for market—has injected nearly \$70 million into small- and medium-sized Manitoba businesses since 2000. In 2005 alone, the program contributed \$15 million toward commercializing groundbreaking technologies and ingenious, lucrative business ideas.



Best available science and technology literature

NRC is a world leader in electronic publishing, and Canada's largest and best resource for scientific, technical & medical information. NRC's science and technology information services are integral to Manitoba's life sciences and medical devices cluster, providing growing companies with the vital information they need to produce cutting-edge innovations.

“Over the years we have also had an opportunity to deal with other technical and business libraries. The NRC-CISTI team has provided more relevant and timely technical and business information than other information providers. In part this comes from a willingness and ability to participate in some of the client meetings up front, but more often it is the open dialogue and understanding of the goals of competitive intelligence. They are often able to go outside the parameters of the original question and make connections to all possible information that could be important to a company's current needs.” – Mavis McRae, Prairie Centre for Business Intelligence

“This investment (in NRC-CCBT) demonstrates our ongoing efforts to make Manitoba a national centre for medical innovation...”

Gary Doer, Premier of Manitoba

The Centre provides research facilities and innovation services for up to 40 companies and technology organizations—helping them bring pioneering biomedical innovations to market. It also helps link emerging medical imaging and medical device companies to expertise across Canada and around the globe.

Services include support for industrial research as well as access to up-to-date science and technology information and competitive technology intelligence. A suite of business-related services, including business planning, marketing strategy support, and intellectual property protection services, is provided by Biomedical Commercialization Canada, a national not-for-profit organization in partnership with the NRC and the Manitoba government.

CLUSTER FACTS AT A GLANCE

- Manitoba houses more than 150 health-related companies that generate sales of more than \$440 million a year.
- Manitoba jobs in life sciences grew by 960% between 1989 and 2004.
- NRC's biodiagnostics R&D facility has a \$30 million-a-year impact on the Winnipeg economy
- Biodiagnostics companies spun-off from NRC are worth over \$200 million.

COMMUNITY ENGAGEMENT

- 1992—NRC opens Winnipeg-based biodiagnostics R&D lab with staff of 25
- 1997—NRC spins off IMRIS Inc., formed to commercialize MRI technology
- 2001—Collaborative research income tops \$1 million at biodiagnostics research facility
- 2002—NRC announces plans for the NRC Centre for Commercialization of Biotechnology (NRC-CCBT)
- 2003—Province commits \$2 million to NRC-CCBT
- 2004—Agreement with Biomedical Commercialization Canada to provide incubation services to companies in the NRC-CCBT
- 2004—NRC launches *Medical Technology Watch Canada* newsletter
- 2005—NRC-CCBT opens its doors

LEADING-EDGE NEWSLETTER

Since 2004, NRC has produced a leading-edge newsletter, *Medical Technology Watch Canada*, which is distributed internationally. The publication is designed to deliver timely, relevant information about the medical technology industry in Canada to partners in the cluster, and beyond. As a community-building vehicle, it provides Canadian companies, researchers and investors with unique insights on key research and innovation being done by Canadian R&D organizations and SMEs.



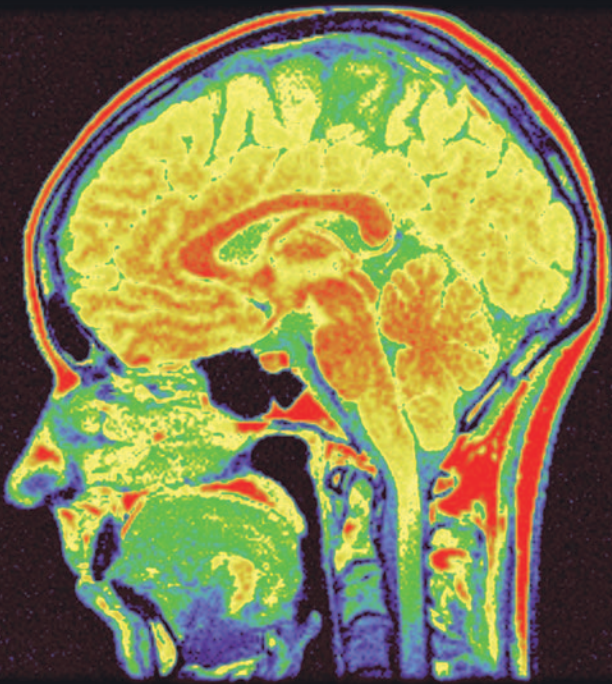
TECHNICAL EXPERTISE

NRC in Winnipeg has had many research collaborations with local, national, and international companies in the biomedical sector. These companies seek NRC's expertise to solve R&D challenges. NRC's Winnipeg research facility employs highly trained personnel in diverse fields such as physics, mathematics, medicine, chemistry, biology and engineering, which results in a multidisciplinary approach to biomedical problem solving.



INCREASING COLLABORATION

Stakeholders of the Winnipeg cluster have come together around the concept of a 'BioMed City', visualized to be a designated development zone, near NRC, where laboratories and scientists could provide synergies for new research, training, product development, commercialization and company start-ups. This important development underlines NRC's success at sparking collaboration among the cluster's stakeholder groups.



“Since 1990 when the Health Care Products Association of Manitoba (HCPAM) was first incorporated with a membership of four companies, to 2005 with a membership of 80 companies, we have experienced first hand the dynamic growth of the industry in Manitoba. NRC is a major player providing industry with access to scientific expertise and business development skills that are critical to the growth of the life sciences cluster in the province.”

Marguerite Laramee, Executive Director, HCPAM



NRC'S CLUSTER PARTNERS

- University of Manitoba
- University of Winnipeg
- National Microbiology Laboratory and Canadian Science Centre for Human and Animal Health (Public Health Agency of Canada)
- St. Boniface General Hospital and Research Centre
- Health Sciences Centre/Children's Hospital
- Health Care Products Association of Manitoba
- Red River College of Applied Arts, Science and Technology

NRC Technology Clusters

GLOBAL REACH—LOCAL TOUCH

NRC has played a critical role in the development of emerging and mature clusters, 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 can develop according to its unique needs, opportunities and challenges.

Committed leadership

Successful clusters 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 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 clusters, putting its leading-edge research to work in innovative communities across Canada.



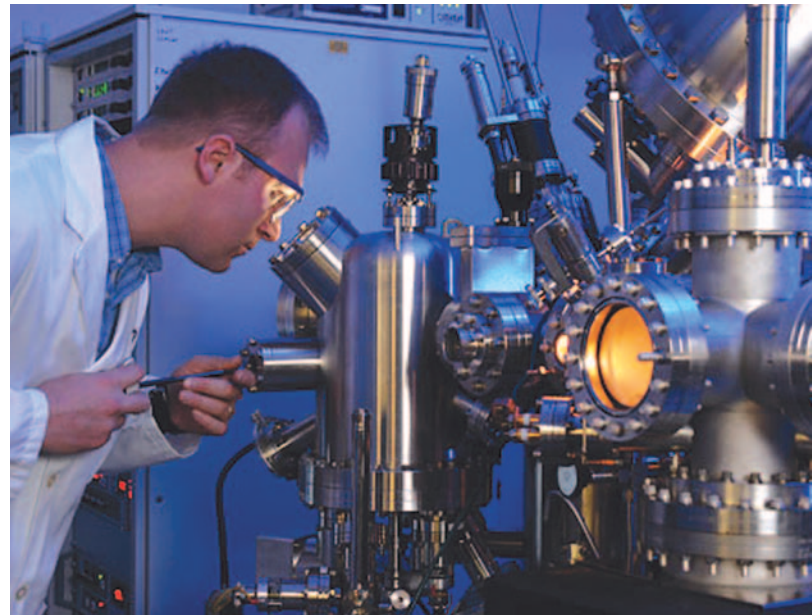
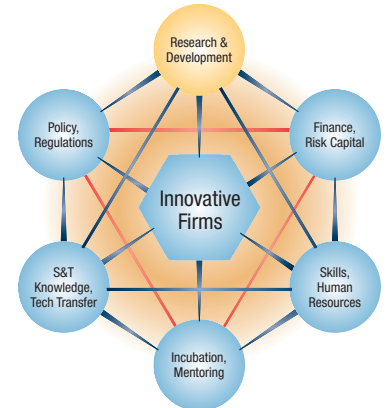
● NRC Technology Cluster Initiatives

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.

<http://ibd.nrc-cnrc.gc.ca>

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