

Technology Partnering Sector Profile^[1] - Minnesota, USA

Quick Facts

Market Highlights

- Led by the University of Minnesota, combined Research and Development (R&D) spending at the top 5 research universities in the Minneapolis post territory exceeds \$1.4 billion^[2] ;
- R&D activities in the region are focussed primarily on life sciences (spread across plant, animal and human biology), implantable bio-medical devices, renewable energy and environment, and nanotechnology;
- The region is home to 19 Fortune 500 companies that fund substantial product R&D and technology partnering programs;
- The region houses 6 technology research and commercialization parks.

Opportunities

- Collaborative research projects leading to joint product development and international market access;
- Technology commercialization partnerships that can lead to OEM supplier opportunities, new technology out-licensing revenue streams, equity investment opportunities and strategic technology in-licensing opportunities;
- Provision of contract R&D services.

Key Players

- The largest research university in the region is the University of Minnesota, with 66,100 students and a \$600 million R&D budget;
- Major companies in the region that are engaged in, or actively pursuing technology partnerships with Canada include 3M, General Mills, Rockwell Collins and Toro;
- Key regional industry associations include Life Science Alley (LSA), the Minnesota High Technology Association (MHTA) and MN Nano.

1. Overview

Technology Partnering services are a recent innovation of Foreign Affairs and International Trade, having been first introduced in 2004 to the U.S. science and technology intensive regions of New York, Boston, Los Angeles and Dallas. Since then, the network of dedicated Technology Partnering Officers in the U.S. has expanded to include Minneapolis, Raleigh and Washington, D.C. Other Post locations in the U.S. provide technology partnering assistance through Trade Commissioners that also provide sector-based or investment-related business development services.

Typical services provided by Technology Partnering Officers include:

- Facilitating technology development and commercialization partnerships between local companies or organizations and Canadian entities seeking strategic partners for financial and technical resources, future OEM supply or technology licensing opportunities;

- Promoting specialized Canadian R&D services and clinical trials services available to U.S. companies;
- Identifying technology out-licensing and in-licensing opportunities of strategic interest to Canadian clients;
- Facilitating research collaborations between local companies and Canadian researchers.

The primary economic and technology drivers of the Minneapolis Post territory include agriculture, manufacturing, life sciences and renewable energy. The challenges and opportunities in these sectors share many similarities with Canadian client interests -- in particular those from the Western and Central regions. Anchored by the University of Minnesota which holds a top ten ranking among U.S. public universities and a \$600 million research budget for 2006, the region is rich in university-sponsored research programs that support technology development and innovation in these sectors. In recent years the region's universities have eagerly embraced industry collaboration and technology commercialization initiatives. Many formal university-industry mechanisms now exist to coordinate and support collaborative research and development programs focusing on life sciences, next generation renewable energy technologies, industrial bio products, advanced digital storage/data management technologies and development of nanotechnologies that serve as multi-sector enablers. Technology intensive companies such as Boston Scientific, Medtronic, 3M, Surmodics, Seagate, Rockwell Collins and a host of others continue to search for innovative new technologies that can add value to their product pipelines. Canadian research organizations, universities and companies are well positioned to satisfy several of these needs. In turn, many area companies also have technologies that are available for in-licensing or acquisition by Canadian companies. The region continues to be a hotbed for research, development and construction of grain ethanol, bio diesel and bio refinery facilities. In the region two plants will soon be expanded to produce next-generation cellulose ethanol from biomass feed stocks. This is an area that offers considerable opportunities for technology partnering leading to new product commercialization and market access, technology licensing and research collaboration for Canadian industry, academia and research organizations.

2. Technology Partnering Opportunities

Canadian companies and research organizations are most likely to find opportunities in providing research expertise, next generation technologies or innovative manufacturing processes to local companies producing or developing medical devices, medical imaging products, information and communications products, bio products, alternative energy products, functional foods and processed food ingredients.

Amidst a diversified and stable economy, Minnesota hosts 19 Fortune 500 companies and 5 of the Forbes' 200 Best Small Companies. Prominent local companies that are actively involved with, or that have expressed interest in research collaborations, technology licensing and technology partnering with Canadian entities include:

- **3M** (<http://www.mmm.com>) - A multi-billion dollar Fortune 500 company which develops and produces a wide variety of technologies and products, including adhesives, abrasives, advanced materials, ceramics, pharmaceuticals, bio-based materials and many others. 3M is one of the most diversified companies in the world.
- **Rockwell Collins** (<http://www.rockwellcollins.com>) - Headquartered in Cedar Rapids, IA, this company is recognized as a leader in the design, production, and support of communications and aviation electronics for customers worldwide.
- **Boston Scientific** (<http://www.bostonscientific.com>) - Minnesota is home to the cardiac division of Boston Scientific (headquartered in Boston, MA). This is a major operation with R&D, as well as manufacturing of cardiac stents, catheters and guidewires.

- **Cargill** (<http://www.cargill.com>) - With interests in a wide variety of life sciences markets Cargill develops and provides agricultural and food products throughout the world. Cargill is ranked #1 of Forbes 400 private firms.
- **General Mills** (<http://www.generalmills.com>) - An internationally recognized leader in food and nutrition products.
- **H.B. Fuller** (<http://www.hbfuller.com>) - A world leader in the manufacture of adhesives, coatings and sealants.
- **Hormel** (<http://www.hormel.com>) - An international manufacturer of meat and other food products. They approach the life sciences industry as both buyers and suppliers.
- **Mayo Clinic** (<http://www.mayoclinic.org>) - One of the world's top hospitals, Mayo Clinic is a major research organization and is considered an expert in many areas of human health.
- **Medtronic** (<http://www.medtronic.com>) - World leader in the design and manufacture of medical devices such as cardiac pacemakers, defibrillators, stents, and neurological and spinal implants.
- **St. Jude Medical** (<http://www.sjm.com>) - An international leader in the design and manufacture of medical devices, primarily in the cardiac field.
- **Syngenta** (<http://www.syngenta.com>) - Syngenta (based in Switzerland) is a world-leading agribusiness that is committed to sustainable agriculture through research and technology. A leader in crop protection, they rank #3 in the world market for high-value commercial seeds.
- **Seagate Technology** (<http://www.seagate.com>) - Seagate Technology (headquartered in Scotts Valley, CA) maintains significant operations in Minnesota, including the company's product and technology development center that is responsible for the development of enterprise class hard drives used in large servers.

3. Important Research Institutions in the Region

The U.S. Upper Midwest region houses many research intensive universities that are open to the out-licensing of technologies to Canadian companies looking to expand their technology platforms and product pipelines. In addition to universities, local technology-intensive research parks should also be considered as rich potential sources of strategic technology partners.

Iowa

The University of Iowa

Research Department: <http://research.uiowa.edu/>

Technology Transfer at the University of Iowa:

<http://research.uiowa.edu/techtransfer/research-home.htm>

University of Iowa Research Foundation

Staff list: http://research.uiowa.edu/techtransfer/staff_uirf.htm

Technology Innovation Center

Staff List: http://research.uiowa.edu/techtransfer/staff_tic.htm

Oakdale Research Park

Staff List: http://research.uiowa.edu/techtransfer/staff_orp.htm

Office of Corporate Partnerships: http://research.uiowa.edu/corporate-partnerships/pages/index.php?get=staff_page

Staff List: <http://research.uiowa.edu>

Iowa State University

Office of Research Assurances: <http://www.compliance.iastate.edu/>

VP Research and Economic Development: <http://www.vpresearch.iastate.edu/>

Staff List: <http://www.vpresearch.iastate.edu/staff.html>

Technology transfer at Iowa State University: <http://www.techtransfer.iastate.edu/>

Iowa State University Research Park: <http://www.isupark.org/>

Staff List: <http://www.isupark.org/contact/>

Office of Industry Relations: <http://www.industry.iastate.edu/>

Minnesota

University of Minnesota

Research Department: <http://www.research.umn.edu/>

Office for Technology Commercialization:

<http://www.research.umn.edu/techcomm/>

Staff List: <http://www.research.umn.edu/contact/index.html>

Regulatory Affairs: <http://www.research.umn.edu/regaffairs/index.html>

Staff List: <http://www.research.umn.edu/contact/index.html>

University of Minnesota - Duluth

Center for Economic Development: <http://www.umdced.com/>

Winona State University

Composite Materials Technology Center (COMTEC):

<http://www.winona.edu/engineering/COMTEC/Overview.htm>

Staff List: <http://www.winona.edu/engineering/FacultyStaff/Listing.htm>

Nebraska

University of Nebraska-Lincoln

Office of Research: <http://www.unl.edu/research>

University of Nebraska Technology Park: <http://www.unebtechpark.com/>

Office of Technology Development: <http://www.unl.edu/research/td/td.shtml>

Staff List: <http://www.unl.edu/research/td/tdstaff.shtml>

University of Nebraska-Omaha

Office of Sponsored Programs & Research: <http://www.unomaha.edu/spr/ucr.php>

Scott Technology Transfer Center: <http://www.scott-technology.com>

Peter Kiewit Institute: <http://www.pki.nebraska.edu>

North Dakota

University of North Dakota

University Research: <http://www.und.edu/research/>

Technology Transfer at UND: <http://www.und.edu/dept/ttc/>

Energy & Environmental Research Center: <http://www.undeerc.org>

North Dakota State University

Research, Creative Activities and Technology Transfer: <http://www.ndsu.nodak.edu/research>

Technology Transfer at NDSU:

http://www.ndsu.nodak.edu/research/tech_transfer/index.php

NDSU Center for NanoScale Science and Engineering: <http://www.ndsu.nodak.edu/cnse>

Center for High Performance Computing: <http://www.ndsu.nodak.edu/chpc/>

South Dakota

University of South Dakota Office of Research: <http://www.usd.edu/oorsch/>

Center for Research and Development of Light-activated Materials:

<http://www.usd.edu/2010crdlm/>

Staff List: <http://www.usd.edu/2010crdlm/crdlmpersonnel.cfm>

Business Research Bureau: <http://www.usd.edu/brbinfo/>

Staff List: <http://www.usd.edu/brbinfo/brbstaff.cfm>

4. Examples of Successful Sechnology Partnering

3M Corporation

In 2005, Consulate staff engaged with 3M Corporation to discuss future corporate technology needs. 3M subsequently agreed to provide the Consulate with a focused list of technology platforms, capabilities and other unique technologies of interest to 3M's business lines. In return, the Consulate committed to provide a relevant short-list of potential Canadian companies and technologies matching 3M's specific interests.

The response rate to "3M Seeks Partnerships" was exceptional with forty Canadian entities requesting partnership discussions. It also generated considerable trade press coverage and interest after the original intake cut-off date, which in turn resulted in more than 30 additional requests. In total, more than 90 technology submissions were compiled and submitted to 3M for consideration. This has now evolved into a best practice model that is being used by other Posts throughout the U.S.

Rockwell Collins

The Consulate is currently engaged in a technology partnering project with Rockwell Collins that seeks to identify Canadian technology partners focused on R&D leading to innovative next generation avionics and communications technologies. Rockwell Collins is searching for Canadian companies and research groups with novel product innovations, technologies, or research and development expertise involving Affordable Broadband & Directional Antennas, Anti-Tamper Technology, Cognitive Radios, Data Fusion Technology, Decision Aiding Software & Algorithms, Optical Avionics, Low Cost Displays, Network Management, System-on-Package,

Information Management, Intelligent Agents for Data Mining, Imaging Sensors, Nanotechnology, Software Development & Verification Tools and Thermal Management.

General Mills

The Consulate, in partnership with Agriculture and Agrifood Canada and the Advanced Food and Materials Network is actively working with General Mills to secure Canadian suppliers and technology partners for functional food ingredients and new processed food products in conjunction with the company's recently launched Global WIN Initiative.

Canadian Government Contacts

Consulate General of Canada in Minneapolis

E-mail: andy.melnyk@international.gc.ca

Internet: <http://www.minneapolis.gc.ca>

Foreign Affairs and International Trade Canada

125 Sussex Dr.

Ottawa, ON K1A 0G2

Internet: <http://www.infoexport.gc.ca>

Useful Contacts and Internet Sites

Trade & Technology Associations

- LifeScience Alley (<http://www.lifesciencealley.org>)
- The BioBusiness Alliance of Minnesota (<http://biobusinessalliance.org/>)
- Minnesota High-Tech Association (<http://www.mhta.org>)
- MN Nano Association (<http://www.mnnano.org>)

[1] *The Government of Canada has prepared this report based on primary and secondary sources of information. Readers should take note that the Government of Canada does not guarantee the accuracy of any of the information contained in this report, nor does it necessarily endorse the organizations listed herein. Readers should independently verify the accuracy and reliability of the information.*

[2] *All monetary amounts are expressed in U.S. dollars unless otherwise indicated.*