



The First Three Years - Getting Down to Business

**Performance Measures Report
January 2008**

Springboard Membership



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Introduction

Springboard Atlantic Inc. was formed to create new opportunities to link together the innovative capacity of Atlantic Canada's academic institutions and build new capacity in technology transfer and commercialization. Atlantic Canada is a region rich with universities and academic opportunities but in order to effectively operate in an increasingly competitive world – where manifold sources of innovation exist – new commercialization models are needed for success. Springboard represents such a new model that is firmly based on the combined research strengths of Atlantic Canada's universities, collectively geared to the Atlantic Canada environment, and designed to increase capacity for technology transfer and development and to link that capacity with local and global industry players.

This report shows that Springboard members have formed and operated an organization that has clearly achieved its initial objectives. The performance measures comprise a set of numeric measurements that point to early success in terms of factors ranging from disclosures to deals. However, that is only half of the story; the members themselves have engineered an organization that represents a real network that has begun to foster an unprecedented level of cooperation. These new cooperative activities have helped to empower the many talented participating individuals. For the long term, investment in human resources – both in terms of skills development and collaborations – have the potential to promote the greatest benefit.

From a global perspective, Atlantic Canada has a small population base and weak private-sector R&D. On the other hand, there are many examples of research-intensive companies that are successfully competing internationally. Atlantic Canada's small business community is truly thriving. In fact, more than 40% of the region's jobs comes from companies with 100 employees or less.¹ When one considers that universities carry out 63% of all of the research and development conducted within the Atlantic region², there is a real need for organizations like Springboard and government support such as ACOA's Atlantic Innovation Fund (AIF).

At the November 21, 2007 Halifax RESEARCH MONEY Conference “*National Priorities and Regional Advantages: Opportunities for Atlantic Canada in Canada's Science and Technology Strategy*”, Arthur May, Chair of the AIF, noted that “...A weak private sector is our major constraint. We need to set up Networks and they have to work.” He urged “...the use of Springboard which supports the commercialization activities of the region's 14 universities.”³

Springboard brings together Atlantic Canadian universities in novel way. While traditionally viewed as competitors, through Springboard the academic institutions have demonstrated a progressive, pioneering cooperative spirit. Over the last three years, Springboard members have worked collaboratively and shared expertise to develop new opportunities within the Atlantic region and to create critical mass and branding that is beginning to be relevant nationally and internationally.

Through initial funding for Springboard provided by ACOA, NSERC and the provincial governments, research-intensive businesses have been established, highly skilled personnel have been attracted and retained, and numerous licensing agreements have been negotiated. In addition, industry increasingly sees the value of partnering with universities on both small and large scale science and technology research projects, enabling a further transfer of value from the university to the private sector and fostering collaboration to identify competitive market niches.

In its initial three years of operation, Springboard has established a sound foundation for future success. This report will provide a comprehensive overview of Springboard's performance since inception until 2006-07. Due to set reporting schedules 2007-08 data is not yet available, but will be included in future progress reports.

1 Atlantic Canada Opportunities Agency (ACOA)

2 Association of Atlantic Universities

3 RESEARCH MONEY, November 28, 2007 p5.

Overview of the Springboard Network

Established in fall 2004, Springboard Atlantic Inc. is a not-for-profit corporation that supports the commercialization of university research in Atlantic Canada. It is funded by a number of agencies including ACOA and the federal NSERC/CIHR/SSHRC Intellectual Property Mobilization (IPM) Program, along with other supporters such as the Nova Scotia Office of Economic Development and Business New Brunswick.

Springboard comprises 14 Atlantic universities. Each of the members has a technology transfer presence (of varying sizes) on campus and the network is supported by a central network office with three core staff.

Springboard's mission is to support the transfer of knowledge and technology to the Atlantic region's private sector. The objectives for the first three years were:

- building capacity for commercializing research and developing industry-sponsored research partnerships at the member universities;
- branding Springboard through marketing and shared activities; and,
- increasing economic development in Atlantic Canada.

Springboard Atlantic Inc. is a not-for-profit incorporated organization with a mandate to support the commercialization of university research in Atlantic Canada.

Springboard provides resources to Atlantic Canadian universities to encourage the transfer of knowledge and technology to the region's private sector.

Springboard's members are 14 of the universities in Atlantic Canada.

Springboard acts to:

- secure and add value to research discoveries, developing these into technologies and subsequently transferring them to Atlantic Canada's and Canada's private sector for commercialization;
- leverage commercial opportunities to carry out sponsored research; and
- establish a framework for resource sharing among members and for undertaking and implementing joint initiatives such as training and skill development.

Springboard Membership

Springboard comprises 14 universities from across the four Atlantic provinces representing a formidable educational, research and technological base for the region. Springboard members include: Acadia University, Cape Breton University (CBU), Dalhousie University, Memorial University (MUN), Mount Allison University (Mt A), Mount Saint Vincent University (MSVU), Nova Scotia Agricultural College (NSAC), Nova Scotia College of Art and Design (NSCAD), St. Francis Xavier (St. FX), Saint Mary's University (SMU), St. Thomas University (STU) Université de Moncton (UdM), University of New Brunswick (UNB) and University of Prince Edward Island (UPEI). The 14 members collectively contribute to meeting Springboard's objectives by carrying out the activities in four main areas⁴:

1. *Technology transfer and commercialization of research at each of the member institutions and at other research centres in Atlantic Canada.* This involves such things as assessing new technologies, filing patents, copyrights and intellectual property claims, and maintaining and managing licenses.
2. *Industry liaison and development of commercial partnerships.* This includes facilitating private-sector sponsored events and meetings, negotiating comprehensive agreements and accessing small business programs for industry support.
3. *Development of spin-off companies and joint ventures with industry.* This includes recruiting experienced management, business planning, and helping to find investors.
4. *Administration of SME programs for sponsored research and development.* This involves working with government to design programs for SMEs and overseeing management and fiscal responsibilities.

Springboard's Governance

The Funding Agreement between ACOA and the Association of Atlantic Universities (AAU) specifies the governance structure for 2004-2008. The AAU was the formal organization that launched Springboard and established the initial governance structure. The AAU continues with its formal responsibilities to represent Springboard under the Funding Agreement.

Springboard has been governed by a seven-member Advisory Board:

Advisory Board Members: 2004-2007

Private Sector Members:

Mr. Rino Volpé, JD Irving Special Projects

Mr. David Wagner, Accelerator

Dr. Regis Duffy, Diagnostic Chemicals

Dr. Ross McCurdy, Ocean Nutrition Canada

Ms. Siobhan Coady, Newfound Genomics

University Members:

Dr. Axel Meisen, Memorial University

Dr. Gail Dinter-Gottlieb, Acadia University

Dr. Yvon Fontaine, Université de Moncton

⁴ A complete list of member office responsibilities can be found in Appendix I

The Advisory Board met four times a year (quarterly) either via conference call or at face-to-face meetings. This Board, comprised of business and university leaders, was particularly important during Springboard's formative stage. Springboard's Executive Director provided support to the Advisory Board and formally reported to the AAU.

During 2007, in part to reflect the emergence of a strong member-based organization and increased commitment of those directly involved with Springboard's operations, the Advisory Board was replaced by an Interim Operating Board. The Operating Board is overseeing the application for a second round of AIF funding starting in 2008 that is intended to build on the substantial progress that has been made so far.

Interim Operating Board: 2007-2008

Dr. Andrew Boghen, Vice-recteur adjoint à la recherche, Université de Moncton

Dr. Carl Breckenridge (Chair), Vice-President Research, Dalhousie

Dr. Greg Kealey, Vice-President Research, UNB

Dr. Chris Loomis, Vice-President, Research & International Relations, Memorial

Dr. Katherine Schultz, Vice-President Research & Development, UPEI

Dr. Kevin Vessey, Dean, Graduate Studies & Research, SMU

Springboard Central Office

Springboard's Executive Director is responsible for overseeing the operation of the network.⁵

The central office has the responsibility to:

- promote Springboard and member capabilities to the wider Industrial and external audiences via dissemination of information and marketing reports;
- manage Proof-of-Concept and Patent & Legal Awards to accelerate development and commercialization of technology opportunities arising from member research activities;
- coordinate training programs to develop highly-qualified professionals at member Institutions and within the region;
- support Springboard governance and management through the activities of the Operating Board, Advisory Board, and Springboard networking;
- monitor, assess, measure and report on performance so that Springboard achievements can be tracked and activities can be targeted or adjusted as needed to fit the scope, mandates and terms of the funding awards.

The Executive Director also has a strong advocacy role with industry and with all levels of government in the region, manages key stakeholder relations, identifies and helps to engage investors and industry partners, and advises and supports governance and operations of the network.

⁵ Currently, a full-time Executive Director is not employed by Springboard pending decisions anticipated in early 2008 about new core ACOA funding. An experienced part-time consultant has been retained as of December 1, 2007 to ensure continuity and maintain organizational momentum.

Springboard Atlantic Inc. Three-Year Performance

Performance Highlights

Springboard has successfully utilized its many resources to create an effective Atlantic Canada technology transfer network. It is flourishing and has become a dynamic organization, successfully working to achieve its objectives. Since its inception, it has contributed to:

- Tripling of the number of professionals engaged in activities to support and further develop Springboard objectives since program inception;
- A 24% increase in the combined research funding of the 14 member institutions, from \$225 million to \$280 million;
- A doubling of the number of member institution technologies disclosed, new patents filed, and revenues received;
- Funding of \$900,000 provided to scientists by Springboard as Proof-of-Concept funding to further develop their concepts into viable technologies;
- Leveraging of substantial federal funds including \$2 million from the NSERC IPM program and \$365,000 from the National Research Council's Industrial Research Assistance Program (IRAP);
- A venue where scientists can “pitch” their technologies and interact with key industry and government representatives;
- Skills development for technology transfer staff throughout the Springboard network;
- Development of critical mass in technology-transfer and commercialization capability at the three largest universities (Dalhousie, University of New Brunswick and Memorial) which provides a major boost to the entire region and collaborations with other members to provide assistance and expertise;
- Recognition that Springboard is emerging as a major mechanism in Atlantic Canada for transferring research value from universities into the private sector; and,
- Full participation as one of Canada's four major regional commercialization clusters in the formation of ACCT Canada – the Alliance for the Commercialization of Canadian Technologies and also in the US-based Association of University Technology Managers (AUTM), an international organization at the forefront of advancing technology transfer.

Specific Performance Measurements

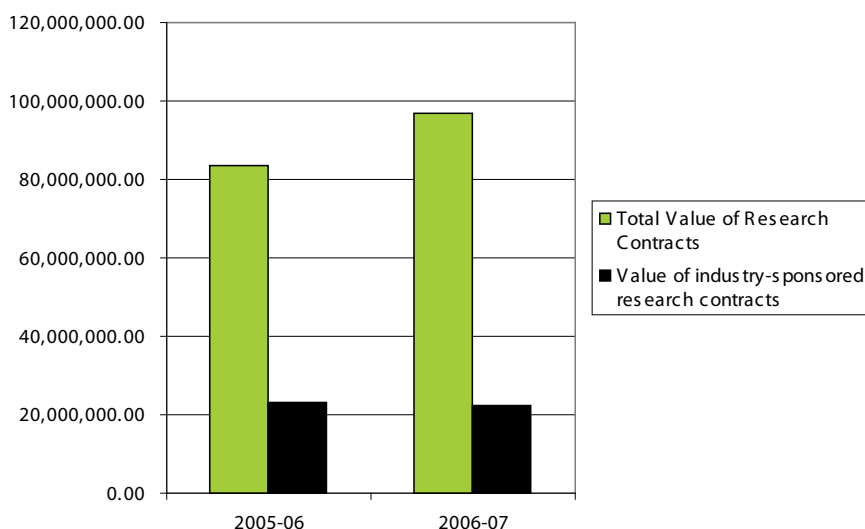
Table 1 illustrates the remarkable growth of technology transfer in the region. In addition to the new licensing activity in Table 1, there has been a significant increase in the number of disclosures, patents, commercialization agreements and revenues resulting from research at the members' institutions. These significant increases in a short time indicate that the additional resources allocated toward technology commercialization are already having a significant effect. Although it is possible that the baseline data may represent some initial underreporting for the first years of Springboard operations, and year-to-year fluctuations are typical, the magnitude and consistency of the changes shows that there has been real impact.

Table 1: Springboard Technology Transfer Statistics

Activity	Disclosures		New Patents		Licenses		Revenue received	
	2005-06	2006-07	2005-06	2006-07	2005-06	2006-07	2005-06	2006-07
Total	49	104	13	26	7	12	\$394,000	\$852,000

The total value of research contracts for Springboard members increased by \$10 million or by 20% to nearly \$100 million as shown in Graph 1. Springboard members are attracting new revenues from a variety of sources.

Graph 1: Comparison of research contracts value: 2005-06 and 2006-07



Total licensing revenues, typically royalties received from companies from past agreements, increased substantially over the reporting period, as shown in the Table 2. Much of the increase was as a result of increased revenues at Dalhousie University; however, the other offices, particularly UNB, MUN and Acadia, also showed a significant gain.

Table 2: Licensing Revenues reported by Springboard Members

Year	2005-06	2006-07	Increase
Total	\$394,000	\$852,000	2.0x
Dalhousie Univ.	\$318,000	\$516,000	1.6x
Other Members	\$76,000	\$336,000	4.0x

The combined annual research budget of the member institutions has increased from \$225 million to \$280 million or by 24%. The distribution is in Graph 2.

Graph 2: Total External Research Support to Springboard members: 2006-07⁶

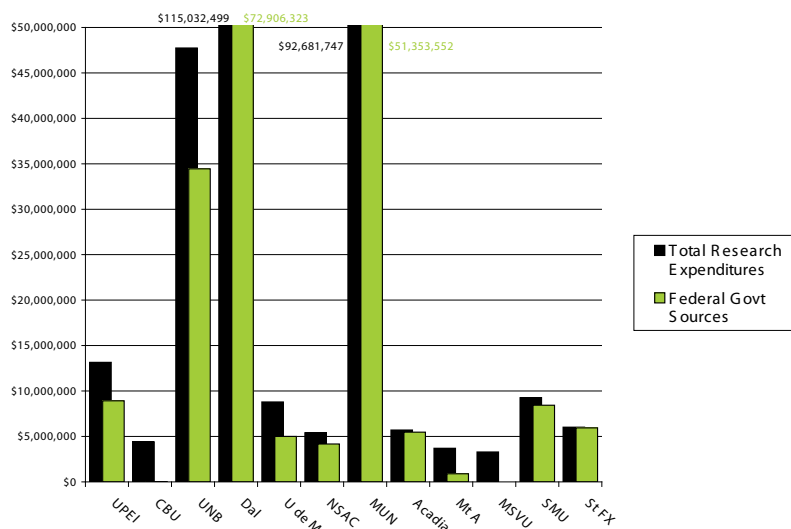


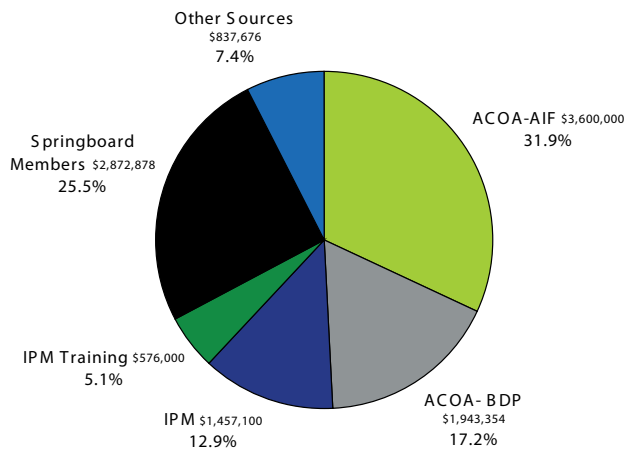
Table 3 and Graph 3 show that Springboard funding comes from a variety of sources, the most important of which are direct funding by the members and ACOA contributions. The combination of funding sources combined with the cooperation among members to allocate funding and share resources has provided a scale of operation that is significant from Canadian and international perspectives.

Table 3: Breakdown of Commercialization Funding by Member and Funding Source

Organization	AIF	BDP	IPM	University	IRAP	Other	Total by organization
Acadia	55,200	123,750	210,000	60,000			448,950
CBU	55,200						55,200
Dalhousie	717,600	475,000	220,000	573,285	330,000		2,315,885
Memorial	285,000	263,691	242,000	688,470		270,076	1,749,237
Mount Allison	41,400	105,000	17,600	37,600			201,600
MSVU	22,100	40,000					62,100
NSAC	55,200	185,475		46,250			286,925
NSCAD							0
Network Office	848,500						848,500
St FX	55,200	95,438	210,000	181,812			542,450
SMU	35,400	155,000	17,500	90,000		120,000	417,900
STU							0
Moncton	110,400	225,000	150,000	217,500			702,900
UNB	248,400	275,000	180,000	566,061	35,180		1,304,641
UPEI	110,400		210,000	411,900		82,500	814,800
IPM Training			576,000				576,000
Springboard Funds	960,000						960,000
Total by source	\$3,600,000	\$1,943,354	\$2,033,100	\$2,872,878	\$365,180	\$472,576	\$11,287,088

⁶ The data for CBU and MSVU is from 2005-06.

Graph 3: Distribution of Springboard funding



The funding by ACOA also provides a base to raise additional funding for commercialization. One of the best examples of leveraging the AIF funding is the Springboard network's successful application for a group award (\$1.54 million) under the federal Tri-Council's (NSERC-CIHR-SSHRC) IPM Program, which enabled a range of commercialization activities and industry outreach. A separate IPM award (\$576,000) supported the training program which substantially enhanced the development of skills network-wide (see later Training and Professional Development section).

Proof-of-Concept Program and Patent & Legal Fund Awards

Approximately \$300,000 is awarded each year through two Springboard programs designed to advance technology or Intellectual Property opportunities and enhance their attractiveness to potential corporate partners or investors. Springboard provides \$20,000 for promising early stage inventions through its **Proof-of-Concept Program** and \$10,000 for investment-ready technologies through its **Patent and Legal Fund**⁷.

These programs provide academic scientists with critical seed money to develop their research in commercially promising directions. The 61 awards have been instrumental in both identifying and advancing the best technologies and in leveraging other funds, for instance from federal NSERC I2I or CIHR PoP programs.

These awards reflect an effective attack on what is recognized widely as a major funding gap between disclosure and recognition of a potential commercial opportunity and the ability to create the research and development data or patent position that potential partners need to make decisions on partnership or investment with Springboard's members.

An analysis of the projects supported (Table 4) indicates that many are in areas where there is high industrial interest such as industrial materials, natural resources and IT. For the medical projects that often require longer and more expensive development and regulatory programs, about half of the projects are in the device areas that have shorter development pathways. The distribution indicates a promising orientation of the support toward practical commercial outcomes and is also well-aligned with the priority fields of the Federal Science and Technology Strategy.

⁷ A complete list of winners is provided in Appendix II.

Table 4: Fields of Projects funded by Springboard Proof-of-Concept and Patent Funds

Area or Field	P-o-C Projects	Patent Projects	Total	% Dist.
IT, Communications, Software	8	10	18	29%
Industrial Materials, Chemistry	8	6	14	23%
Energy, Environment, Natural Resources (including oceans and agriculture)	7	5	12	20%
Therapeutics	3	6	9	15%
Medical, Diagnostic and Assistive Technologies	4	4	8	13%
Funds Allocated	\$599,014	\$305,138	\$904,152	

Working with SMEs and Launch of New Ventures

Springboard members work actively with local start-ups and SMEs such as ImmunoVaccine Technologies, Satlantic, Amirex, Spielo/GTECH, Rutter Technologies, NewLab Clinical, and Newfound Genomics. Of the 21 reported licenses or options executed over the past two years by Springboard members, over 80% were to new ventures or SMEs. This is an indication of the growing importance of technology and research linkages with the Atlantic Canada economy.

In situations where a technology opportunity can attract investment and management or be bundled together with other opportunities to create a critical mass of commercial activity, spin-off companies may be formed. Such new ventures represent a mechanism for technology commercialization with consequent benefits of local development of commercial skills and future industrial or high-technology capacity. Springboard members are increasingly well-positioned to assist the planning and formation of new ventures.

Formation and launch of new ventures has been a huge challenge since the ‘technology meltdown’ around 2000-2001. For instance, the University of British Columbia (UBC) is arguably Canada’s leader in commercialization. According to UBC data, from 1997 through 2002, 35 spin-off companies were launched, with a peak of 13 in 2001. This declined to two spin-offs per year in 2004 and 2005, three in 2006 and recently increased to five in 2007. The current investment climate in Canada – particularly the shortage of start-up and expansion capital – has resulted in relatively low numbers of start-ups.

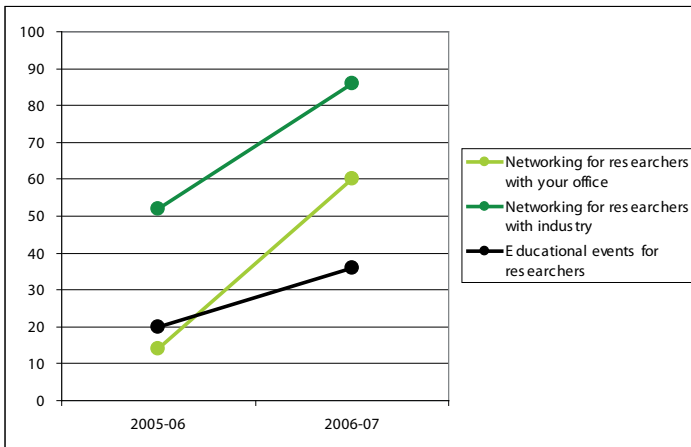
Springboard member organizations have been involved with start-up ventures over time – before Springboard came into existence, and since then. Some venture opportunities have arisen independently from the broad base of university research activity. In other cases the university has been central to new venture formation and are stakeholders. The list below provides examples from the Springboard network and illustrates potential; however it should be noted that many of these companies were developed and formed pre-Springboard. The new ventures operate in diverse fields ranging from the entertainment/communications sector to mining, energy and health:

- ALZ Diagnostics
- Atlantic Hydrogen
- BioProspecting NB Inc.
- Cathexis
- Denovomed
- Diaphonics
- Green Imaging Technologies
- HSM systems
- Infinity Holdings Inc.
- Innovascreen
- Inversa Systems
- Kaisi Energy Inc.
- Music Path
- North Atlantic BioPharma
- NovaLipids
- Q1 Labs
- R&D Pharma Inc
- Sansura Holdings Corp
- Verafin
- Virtual Marine Technologies

Networking

Springboard members work closely with scientists to protect their ideas as the research is transferred to the private sector for commercialization. Increasingly, researchers are eager to engage with industry to license their technologies, establish companies or undertake sponsored research. Throughout the Springboard network, technology transfer and industry liaison staff have been successful in setting up new industry interaction and networking opportunities for researchers. Networking with industry increased 1.7 fold as shown in Graph 4.

Graph 4: Total networking events for Springboard member researchers

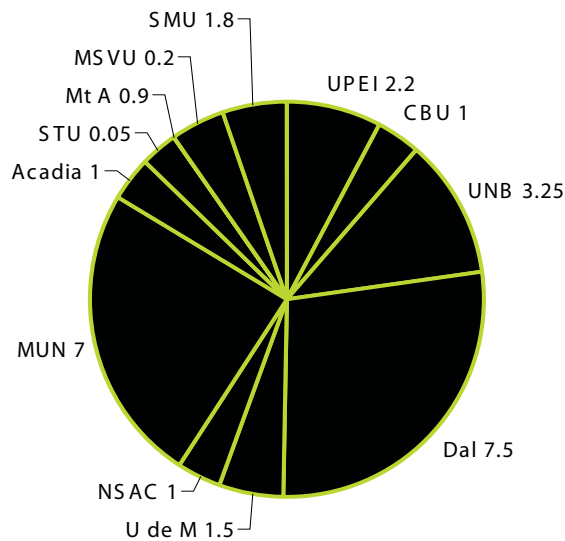


Technology Transfer Staff

A technology transfer capacity has been established at all members' campuses. In some cases, the resource is shared either between universities or within the university. It is felt that the appropriate critical mass of educated, experienced technology transfer staff has been established within the network.

Prior to Springboard there were just nine TTO/ILO professionals within the network. Today that number has more than tripled (Graph 5). This is a critical feature of the impact of Springboard because of the very strong correlation between number of technology-transfer/commercialization professionals on the ground and overall performance (based on AUTM data). Staff supporting the Springboard network include professionals supported by AIF complemented by other sources such as IPM and member funds as illustrated previously in Graph 3.

Graph 5: Distribution among members of the approximately 30 full-time equivalent staff supporting the Springboard network



Increased Collaboration Among Members

A frequent observation that has been made by members at both the management and operational levels is the benefit and efficiency of effectively using and sharing local expertise in specific areas. As the technology transfer professionals become more comfortable in their institution and with each other, there is an increasing amount of project consultations taking place. There are many examples of true collaboration within the membership and exchange of expertise between members:

- Springboard members organized meetings with major companies to jointly explore collaboration (Pratt & Whitney, Ultra-electronics);
- Acadia was assisted by MUN to arrange technology transfers and collaborations with SMEs in one Atlantic Province involving technology from another Province;
- Dalhousie and MUN ‘walking the halls’ of UPEI to assess biotechnology opportunities;
- UNB is sharing expertise and doing contract drafting and legal work and some patent assessments for other universities, e.g. Université de Moncton;
- with the 2007 Fund Award applications, the larger offices helped the smaller ones with drafting applications;
- various network members participated on the Showcase Committee and the Training Committee to assist in Network activity planning and coordination;
- network professionals along with external invited experts led and taught at training sessions;
- mentoring between experienced officers and interns to affect on-the-job training and sharing of experience;
- members participated in policy roundtables aimed at standardizing regional IP and commercialization procedures;
- Dalhousie, MUN and UNB – the three largest universities – are sharing responsibilities on some of the major reporting/accountability requirements; and
- Springboard has been a key resource for all Atlantic Canada for university-led AIF proposal preparations and project management, i.e. budget and contracts.

A feature of the original Agreement was the concept of ‘service days’ whereby larger offices were to contribute a certain amount of service time to smaller offices – with the time contribution determined by a formula. The formulaic aspects did not work in practice; however the collaboration objective was fulfilled. Springboard found out that the reality of collaborations within a network are far more personal and dynamic than originally envisioned and each interaction has to be based on value provided, not time. The results of the initial service days concept were very valuable and have led to the creation, for the next proposed phase, of a *Joint Assessment Committee*. This Committee will allocate budgets and support for the most promising opportunities from all members.

Training and Professional Development

Training and skills development has been an important component of the Springboard’s implementation and success to date. For technology transfer staff, Springboard, through the Tri-Council-funded IPM program, had a full-time Training Coordinator. Through this program, 12 external professional development opportunities were offered to Springboard members such as the well-respected Westlink Intern Bootcamp and AUTM’s Valuation Course. Eighteen one- or two-day regional workshops were also held covering such topics as Marketing, Intellectual Property and Technology Assessment. These Springboard courses and events contributed directly to skills development and also through personal contact enhanced the ability of people from various members’ offices to work more collaboratively⁸.

Another initiative to increase the skills of technology transfer staff is the external placement program. This affords interns the opportunity to work and gain experiences in other like-minded organizations such as venture capitalists, economic development agencies, technology start-ups or other technology transfer offices. Five placements have been successfully implemented since the start of the program:

- A Memorial intern worked with Newfound Genomics Company one day a week for several months - Newfound is a growing biotech start-up company in St. John’s providing gene sequencing services nationally and internationally and pursuing a promising discovery program.
- A Dalhousie intern spent a few weeks in the UNB office sharing his knowledge in engineering and sales while learning the processes in the UNB office.
- A UPEI intern spent five weeks improving her ability to draft patents with Ogilvy Renault in Ottawa. She is now scheduled to write the Canadian Patent Exams in April 2008.
- A second Memorial intern spent six weeks with BDC in their Montreal and Toronto offices learning about their process for analyzing venture investment opportunities,
- An intern from UNB spent six weeks at Warwick Ventures in Coventry, England to gain technology evaluation exposure in an international venue.

⁸ A complete list of the professional development opportunities and regional workshops can be found in Appendix III.

Annual General Meetings and Technology Showcases

Each fall, the Springboard central office organized an annual general meeting as a medium to provide members with an update on yearly progress, to share key successes and to build personal connections that provide the basis for Springboard's networking of expertise and assistance among members.

From 2005 to 2007, Technology Showcases were held as part of these annual meetings, whereby individual researchers had an opportunity to give a five-minute pitch describing their technology opportunity to relevant industry and government representatives. This gave the researchers a chance to benefit from feedback about their ideas as well as an opportunity to meet relevant private sector representatives. Similarly, it gave the private sector early exposure to promising new technologies. Further, as the network gained experience, each Showcase presented an improvement in efficiency and innovation over the previous one. For example, the second Showcase was held virtually and the third called upon the technology transfer officer to present the technologies in a well-rehearsed and consistent format for maximum impact. The lists in Appendix IV demonstrate the wide variety of technologies and potential innovative capacity of Springboard member institution researchers.

Communications

The Springboard central office has developed several communication tools to keep members informed and connected. These include: an e-mail list, semi-monthly newsletter, and public and members-only web sites. Growing use of these tools demonstrates increasing interaction between members as they share experiences, knowledge, events, and template documents. Springboard's public web site averages about 3,000 hits per month.

A members-only web space hosted by SMU has been set-up for all network members. It uses software called SharePoint. Member feedback indicates that this is a useful tool and it receives 200-400 hits per month. There has also been a *Highlights Report* produced that includes information about available technologies. An additional and novel initiative for the distribution of university technologies is the recording and subsequent web offering of short videoclip presentations.⁹ French-language services are also provided via l'Université de Moncton - the web site provides publication of key reports in both official languages.

Flintbox is an online platform developed originally at University of British Columbia that provides access to early stage research for dissemination, download and license. In 2006, Springboard became the **Flintbox Atlantic Canada channel partner** and this tool is used regularly by the members. The Springboard office offers training, posting assistance and technical support to its members, reducing the need to continually 'import' expertise from across the country. Through the channel partnership two community colleges – College of the North Atlantic and Nova Scotia Community College – have also joined the Flintbox network.

The AAU has undertaken public communications activities in support of Springboard and university research collaborations. Six half-hour programs were produced for ASN featuring 'life changing' research being conducted at Dalhousie, UNB, NSCAD and NSAC. Future productions are pending that highlight research at Memorial, MtA, MSVU, UdeM and Dalhousie. The brochure *Atlantic Canada Universities: Creating a Knowledge Advantage through Research Excellence, Collaboration and Partnerships*, funded by ACOA, was distributed widely to Atlantic Canada federal and provincial Members of Parliament, Mayors, Chambers of Commerce, economic development agencies, and beyond Atlantic Canada to the Federal University Granting Councils.

⁹ <http://www.umoncton.ca/fesr/springboard/>

Conclusion

Cultural Shift

There is a strong consensus by Springboard members that commitment to knowledge mobilization and technology transfer is growing at the universities, and that commercialization is one of the important mandates of the university sector. Leadership in Springboard by members, particularly by Vice-Presidents, Research and Technology Transfer Directors has signaled this priority to faculty and beyond including the private sector and all levels of government. Faculty members are increasingly seeking out opportunities to collaborate with companies, non-profit organizations and government to find non-traditional applications for their research. Members' technology transfer/ industry liaison offices have been successful in enhancing the innovative research and development activities on campus through linking industry and researchers together on projects and technologies that have very good commercial potential.

It is difficult to quantify the impact of 'networking' aspects of Springboard such as exchange of expertise, responsiveness, and contribution to changing university cultures. In some institutions and departments, university faculty and trainees are unfamiliar, unaware and sometimes unaccepting of commercialization activities. This is particularly relevant for the smaller universities with newly-established technology transfer offices. In universities where the level of awareness among faculty about issues of intellectual property is very low, measuring success by only counting "deals made" is inadequate and would be a sure way to discourage technology transfer staff. Educational events and industry liaison work that Springboard sponsors and enables are important precursors to future commercialization activity. Members, more often from the smaller offices, have commented on improved 'attitude' in their institution due to belonging to Springboard and having the 'backup' of the network to improve their ability to offer a variety of services.

Established Reputation and Branding

Springboard members and central office staff have worked diligently to increase the visibility of the network throughout North America. The Springboard brand is now more readily recognized and has been cited as a model for similar networks across Canada.

One of the important early outcomes of Springboard activities is the greatly improved awareness among the members of the combined strengths of the institutions working together to create better outcomes and also to be able to be viewed – on both the national and international scenes – as a significant player. Atlantic Canada universities have innovations that are commercially-relevant and the quality of the science base is very high. Creating recognition and getting the word out effectively is one of Springboard's strengths.

One outstanding example of Springboard's international influence was the effort catalyzed by the AAU as part of the Trade Mission to Boston in November 2007. AAU in conjunction with ACOA's Trade and Investment Branch and the Canadian Consulate in Boston, helped to arrange a roundtable discussion among university Research VPs and Presidents with their counterparts in the greater Boston area. The intention was to foster closer working relationships between Atlantic Canada universities and university and health care centres of research in New England. This is particularly important given the geographic proximity of Springboard members with the dynamic New England biomedical community.

Emergence of Springboard as a Successful Model for Atlantic Canada

In three years, Springboard has established itself as a cohesive organization working to achieve the objectives established in 2004. Springboard's funding and leadership has enabled its members to share resources, to exchange expertise and to establish critical mass – with the sharp focus and common goal of bringing research out of university labs to explore its commercial potential.

Increasingly, researchers are eager to engage with industry to license their technologies, establish companies or undertake sponsored research. The technology transfer/industry liaison offices want to continue to build strength and expand the existing collaboration within the research community, all for the common objective of enhancing the commercialization success of academic research in the Atlantic region, and contributing substantially to the Atlantic region's cultural and economic goals.

The Next Phase of Springboard

Springboard members, through the AAU, have made a proposal to ACOA for core funding for the next three-year phase. Springboard may also serve as a platform for new regional partnerships (universities, the private sector and governments) to take advantage of the Federal Science & Technology Strategy. The proposal contemplates refining and continuing to build commercialization capacity throughout the Springboard network along with the expansion of private-sector interactions. As part of implementation of the next phase, Springboard membership will be expanded to include Atlantic Canada community colleges.

The proposal entails:

- a new orientation to forming major partnerships and collaborations with the region's industries and to foster new ventures;
- continued strengthening of Springboard technology transfer and industry liaison activities and support of the professionals involved with commercialization and located throughout the Atlantic region;
- a new *Technology Assessment Committee* to prioritize discoveries and enable the best qualified Network team to handle the transfer of the technology to industry;
- mobilization of Springboard's Proof-of-Concept, Patent & Legal and proposed Business Planning funds to add value to the most promising discoveries;
- an enhanced governance structure with a Board of Directors with representation from the universities, colleges and the private sector; and
- strengthening the management team in the central coordinating office.

New initiatives and programs, including a training program for business students, and links with other government agencies to strengthen support for early stage ventures, will be pursued by Springboard. In addition, Springboard will leverage, wherever possible, additional funds from the federal IPM program, Canada Foundation for Innovation, Federal Laboratories, and Industry Canada initiatives along with other potential sources to expand services and fund new initiatives.

Renewed funding will permit continued growth of this exciting, highly successful initiative for the economic and social benefit of Atlantic Canada.

Appendices

Appendix 1: Complete Listing of TTO/ILO Activities

1. Technology transfer and commercialization of research at each of the member institutions and at other research centres in Atlantic Canada.
 - assessment of new technologies
 - patent, copyright and intellectual property filings
 - assistance in development work and funding
 - promotion of an entrepreneurial culture in university research
 - licensing and other commercialization
 - partnering with industry
 - license maintenance and management
2. Industry liaison and development of commercial partnerships.
 - facilitating private-sector sponsored events and meetings
 - development of programs and partnerships with industry
 - small business programs for industry support
 - negotiation of comprehensive agreements
 - project management to implement industry partnerships
 - creation of special purpose agreements with individual companies
3. Development of spinout companies and joint ventures with industry.
 - assistance in recruiting industrial and business partners
 - structural organization and business planning
 - implementation of legal and consulting agreements
 - assistance in company governance and science and technology management
 - recruitment of experienced management
 - company promotion and investor assistance
4. Administration of SME programs for sponsored research and development.
 - working with government to design programs for SMEs
 - implementation of programs
 - management and fiscal oversight
 - reporting and metrics

Appendix II: List of Fund Award Winners

Springboard Proof-of-Concept Fund Awards

2005

Institution	Researcher	Title of Invention	Amount Awarded
Acadia	Craig Bennett	Process for Commercial Fabrication of Improved Ni-Mn-Ga Magnetic Shape Memory Alloys	\$20,000
Acadia	John Murimboh	A novel microscale <i>in situ</i> sampling device for monitoring trace metals in natural waters	\$20,000
Dalhousie	Biman Das	Ergonomic Wheelchair Design	\$20,000
Dalhousie	Geoffrey Maksym	Forced Oscillation Device for Airway Function Assessment	\$20,000
Memorial	Ya-Gang Xie	A Method for the Detection of Risk Factors Associated with Myocardial Infarction	\$20,000
St. FX	Michael Steinitz	Oil Pipeline Leakage Sensor	\$20,000
Université de Moncton	Habib Hamam	Accès à la machine et à Internet par mouvements	\$20,000
Université de Moncton	Jamel Ghouili	Optimisation d'un système de traction électrique à pile à combustible at supercondensateurs	\$19,985.
UNB	Ghislain Deslong-champs	Development of Chemistry Flashware Products	\$20,000
UNB	Paul Arsenaault	Backscatter Computed Tomography	\$19,935
		Sub Total	\$199,920

2006

Acadia	Sharon G. Roscoe	Bionanotechnology and Nanolithography with Biological Molecules using Scanning Probe Microscopy under Potential Control	\$20,000
Dalhousie	Geoffrey N. Maksym	Oscillation Spirometer	\$20,000
Dalhousie	George S. Robertson	Induction of Immune Cell Apoptosis to Treat Multiple Sclerosis	\$20,000
Dalhousie	Mark Stradiotto	Chiral Metalloligands Derived from Substituted Indenes, Complexes Formed Therefrom and Uses	\$20,000
Memorial	Brian Veitch	Wavetimer interface with wave sensing technology	\$20,000
NSAC	Glen Sampson	Mycoherbicides for use on Gallium species in Canada	\$19,870
UNB	Jim Christie	Modifying a Linehaul Optimization Model to Make it Easily Adaptable to Various Transport Companies' Operations	\$20,000
UNB	Liuchen Chang	Single-Phase Buck-Boost Inverter	\$20,000
UNB	Ghislain Deslong-champs	General Chemistry Flashware	\$20,000
UPEI	Andrew Tasker	Commercialization of a Developmental Rat Model of Epilepsy	\$20,000
		Sub Total	\$199,870

2007

Dalhousie	Josef Zwanziger	Predictors and Compositions of Environmentally Safe Glass	\$20,000
Dalhousie	Mark Stradiotto	New Catalysts for Industrially Significant Chemical Transformations	\$20,000
Dalhousie	Theresa C. Peterson	A Non-Invasive Fibrosis Test for Screening Novel Antifibrotic Drugs	\$20,000
Memorial	Kenneth Kao	The Pygopus Protein, a Molecular Bio-marker for Cervical Cancer Screening	\$20,000
NSAC	Bernhard Benkel	DNA Markers for Reproductive Lifespan	\$20,000
NSAC	Balakrishnan Prithiviraj	Seaweed-based Product for Alleviation of Salt Stress In Plants	\$19,924
St. FX	Dave Risk	A new non-invasive method to detect subsurface hydrocarbon contaminants	\$20,000
UNB	Bruce J. Balcom	Software for Determination of Relative Permeability of an Oil Industry Rock Core Sample	\$20,000
UNB - Saint John	Janet Light	Agent-based Mobile Middleware Architecture (AMMA) for Medical Data Transmission Over Cellular Network	\$20,000
UPEI	David Speare	Spore-based vaccine against Microsporidial Gill Disease	\$20,000
		Sub Total	\$199,924
		Total Proof-of-Concept Awards (2005-2007)	\$599,014

Springboard Patent & Legal Fund Awards

2005

Institution	Researcher	Title of Invention	Amount Awarded
Dalhousie	Biman Das	Ergonomic Wheelchair Design	\$10,000
Dalhousie	Chris Taggart & Barry Ruddick	Use of Magnetically Attracted Particles & Magnetic Particle Collectors	\$10,000
Dalhousie	Geoffrey Maksym	Forced Oscillation Device for Airway Function Assessment	\$10,000
Mount Allison	Douglas Campbell	Peptide Sequence Tags and Method of Using Same	\$10,000
Mount Allison	S.A. Westcott	Method and Preparing Main Group Boryl Compounds	\$10,000
Memorial	Ya-Gang Xie	A Method for the Detection of Risk Factors Associated with Myocardial Infarction	\$10,000
NSAC	Gefu Wang-Pruski	Genes and proteins in potato and their relationship to potato after-cooking darkening (ACD)	\$8,000
NSAC	Gefu Wang-Pruski	Cinnamic acid-4-hydroxylase (C4h)	\$8,000
St. FX	David Risk, et al.	Roller-type laboratory sample mill and homogenizer	\$10,000
Université de Moncton	Priscille Massé	CB6Pro: a formula for prevention and treatment of osteopenia as an alternative to pharmaceuticals	\$10,000
UNB	Paul Arsenault	Backscatter Computed Tomography	\$9,138.42
UNB	Travis Maxwell	Supervised/Trained Segmentation for Object-Oriented Classification	\$10,000
		Sub Total	\$115,138

2006

Dalhousie	Geoffrey N. Maksym	Oscillation spirometer	\$10,000
Dalhousie	Harold A. Robertson	Modulators of PDE10a activity: novel compounds for the treatment of schizophrenia	\$10,000
Dalhousie	Mark Stradiotto	Chiral Metalloligands Derived from Substituted Indenes, Complexes Formed Therefrom and Uses	\$10,000
Memorial	Kenneth Kao	Pygopus: a molecular target for neurological disease and cancer diagnosis and therapy	\$10,000
Memorial	Mohsen Daneshtalab	Novel Series of Chlorogenic Acid Derivatives with Promising Antifungal Activity	\$10,000
Memorial	Robert Gendron	MAB to Tubedown as a Diagnostic and Prognostic Marker in Pediatric Cancer	\$10,000
St. FX	David Risk	Improved technique for high purity sampling of soil gas emissions	\$10,000
UNB	Huining Xiao	Antimicrobial Paper	\$10,000
UNB	Ying Zheng	Adsorbents for Deep Denitrogenation/Desulfurization of Hydrocarbon Oils	\$10,000
		Sub Total	\$90,000

2007

Acadia	Stephane Lemieux	System and Method for Encryption and Authentication	\$10,000
Dalhousie	Geoffrey N. Maksym	Oscillation Spirometer	\$10,000
Dalhousie	Josef Zwanziger	Predictors and Compositions of Environmentally Safe Glass	\$10,000
Dalhousie	Theresa C. Peterson	A Non-Invasive Fibrosis for Screening Novel Antifibrotic Drugs	\$10,000
Memorial	Hu Liu	Pharmaceutical Grade Lipid Emulsion for Use in Human Intravenous Feeding	\$10,000
NSAC	Balakrishnan Prithiviraj	Seaweed-based Product for Alleviation of Salt Stress in Plants	\$10,000
SMU	Robert Singer	Ionic Liquid Compound for use as alternative Solvents for the reduction of metals	\$10,000
Université de Moncton	Alain Haché	Single Laser Beam Instrument to Measure Thermal Conductivity of Solids and Liquids	\$10,000
UNB	Bruce J. Balcom	Method of Determination of Relative Permeability from a Rock Core Sample	\$10,000
UNB - Saint John	James Christie	Linehaul Trucking Software (Modifying a Linehaul Optimization Model To Make It Easily Adaptable to Various Transport Companies' Operations)	\$10,000
		Sub Total	\$100,000
		Total Patent & Legal Awards (2005-2007)	\$305,138

Appendix III: Professional Development Offered to Springboard Members

WestLink

Internship Boot Camp Date: 25-Aug-05 # Attendees: 11

AUTM

Graduate Course Date: 01-Dec-05 # Attendees: 4

Annual Meeting 2006 Date: 02-Mar-06 # Attendees: 5

Digital Media & Software Licensing Date: 23-Jun-06 # Attendees: 2

Basic Licensing Tools Date: 26-Oct-06 # Attendees: 4

Marketing Course Date: 07-Mar-07 # Attendees: 1

Annual Meeting 2007 Date: 08-Mar-07 # Attendees: 7

Valuation Course Date: 10-Mar-07 # Attendees: 1

ACCT

Basic Licensing Date: 03-Nov-05 # Attendees: 8

Introduction to Technology Transfer Date: 14-Nov-06 # Attendees: 5

SkillPath

Managing Multiple Projects Date: 15-May-06 # Attendees: 4

Regional Workshops

Technology Monitoring & Assessment (RW1) Date: 30-Jan-06 # Attendees: 12

Trainers:

Barbara Campbell, UBC UILO
Beverly Sheridan, Technology Now, Calgary
Keith Gilchrist, NRC, Ottawa

Location: St. Mary's University

Negotiation, Networking, and Sales (RW2) Date: 03-Apr-06 # Attendees: 12

Trainers: Fairwinds Training & Development of Halifax

The Science of Marketing (RW3) Date: 30-May-06 # Attendees: 20

Trainers:

Jane Muir, Associate Director, Office of Technology Licensing, University of Florida
James Zanewicz, Director, Office of Technology Transfer, University of Kentucky

Location: Nova Scotia Agricultural College

Flintbox for Location Managers Date: 14-Jul-06 # Attendees: 5

Instructor: Tanya Moxley, Training Coordinator, Springboard

Online Patent Searching Date: 28-Aug-06 # Attendees: 12

Instructor: Tom Boyd, CIPO

Master of Negotiation Seminar Date: 29-Aug-06 # Attendees: 15

Trainer: Management Performance Centre of Toronto

Intellectual Property (Intermediate) (RW4)	Date: 03-Oct-06	# Attendees: 25
<u>Trainers:</u> Marcel Mongeon, Intellectual Property Coach, Mongeon Consulting Pat Lorenz, Director, Business Development Office, University of Guelph		
<u>Location:</u> Mount Allison University		
Developing Tech. Opportunity Sheets (RW5)	Date: 06-Dec-06	# Attendees: 14
<u>Trainer:</u> Adi Treasurywala, ArrowCan Partners		
Communications & Marketing 101 (RW5)	Date: 06-Dec-06	# Attendees: 12
<u>Trainer:</u> Sarah Young, MT&L Communications		
ACOA-AIF Proposals (RW5)	Date: 07-Dec-06	# Attendees: 16
<u>Trainers:</u> Rob MacDonald & Raymond Roberts, ACOA Nova Scotia		
NSERC i2i Proposals (RW5)	Date: 07-Dec-06	# Attendees: 16
<u>Trainer:</u> France Vaillancourt, Project Officer for Research Partnership Programs at NSERC		
CIHR PoP Proposals (RW5)	Date: 07-Dec-06	# Attendees: 14
<u>Trainer:</u> Michelle Peel, Deputy Director, Commercialization Programs at CIHR		
Springboard Fund Proposals (RW5)	Date: 07-Dec-06	# Attendees: 17
<u>Trainers:</u> Doris Grant, Senior Manager, Technology Commercialization: Life Sciences, Dalhousie University Paula Clarke, Technology Commercialization Officer - Life Sciences, Genesis Group /Memorial University		
Introduction to Product Design (RW5)	Date: 08-Dec-06	# Attendees: 8
<u>Trainer:</u> Glen Hougan, Professor, Industrial Design, NSCAD University		
So what? Who cares? Why you? (Hfx1-RW6a)	Date: 17-Jan-07	# Attendees: 16
So what? Who cares? Why you? (Hfx2-RW6b)	Date: 18-Jan-07	# Attendees: 16
<u>Trainer:</u> Wendy Kennedy, wendykennedy.com inc		
Knowledge Transfer (Harris Institute)	Date: 27-Feb-07	# Attendees: 11
<u>Trainer:</u> Robert Greenwood, Director, Harris Centre of Regional Policy and Development, Memorial University		
<u>Location:</u> Université de Moncton		
Partnerships with Start-ups (RW7)	Date: 11-Apr-07	# Attendees: 18
<u>Trainers:</u> Management team members from UNB spin-offs: Q1 Labs, Atlantic Hydrogen, and Green Imaging Technologies.		
<u>Location:</u> University of New Brunswick, Fredericton campus		

Appendix IV: Technologies Showcased in 2005, 2006 and 2007

Institution	Technology	Area
Technology Showcase - 2005		
DAL	Airway Variability in Airway Hyperresponsiveness	Biomedical Engineering
MSVU	Projects from Maritime Data Centre for Aging Research and Policy Analysis	Aging and Caregiving
Mt. A	Potent Peptide Paralytic Agent	
MUN	Obesity Research	Biotech
Acadia	Applications for Relaxin-3	Aquaculture, Stroke
DAL	Neosis: A Novel Type of Cell Division in Cancer	Medicine, Hematology
MUN	Gene-Gene Interactions in Early Onset Heart Disease	Biotech, Diagnostics
UPEI	Bioactive compounds in natural products	
DAL	Antidepressants as Novel, Peripherally Acting Analgesics	Medicine
Mt. A	Method of Preparing Main Group Boryl Compounds	
MUN	Pygopus Gene in Ovarian Cancer	Diagnostics, Therapeutics
Acadia	SkateSim™	Athletic training
UPEI	Biomedical research animal research models	
DAL	Development of Novel Therapeutics for Alzheimer's Disease	Medicine, Chemistry
St. FX	Bacterial Surfaces and Biofilms	
DAL	Nanoscience and technology: From chemical synthesis to biotechnological applications	Chemistry
SMU	Ionic Liquids: An Alternative to Traditional Solvents	Handling of effluent waste
UNB	Ultra-high Activity Alumina	Chemical engineering
DAL	Magnetite Tracer particles & Autonomous Collector Systems	Oceanography
Mt. A	Environmental Proteomics (Spin-off): Peptide Sequence Tags and Method of Using Same	Biotech, Medical, Environmental
UNB	Beyond Kyoto: Atlantic Sustainable Power R&D Initiatives	Electrical & Computer Eng
DAL	Photonics Research at the Faculty of Engineering of Dalhousie University	Electrical & Computer Engineering
UNB	One-Sided Reconstructive X-Ray Imaging	Mechanical Engineering,
MSVU	Support for Children with Autism in Child Care Settings	
SMU	Safety Culture Improvement Model	Oil & Gas
MSVU	Credit Unions and Community: Three Case Studies from the Social Economy	Sociology & Anthropology
MSVU	Special Needs Information Service	
UNB	MRI Technologies	Physics
DAL	Digital Holographic Microscope	Physics
U de M	Innovative Thin Films Materials and Systems	Physics
MUN	Nanotechnology for Data Storage	IT, Nanotechnology
St. FX	Servqual Dynamics Tracking	IT
DAL	Mining the Information in Large Networks	Computer Science
MSVU	Emergency Response simulation platform for collaborative learning	

UNB	High Precision Real Time Kinematic Global Positioning System Application	Geodesy and Geomatics Engineering
SMU	Designing Human Technology Interaction	Mathematics & Computer Science
St. FX	Health Informatics and Medical Assessment Software Research	IT
MUN	Location Aware Method Software	IT
DAL	GINlus	Computer Science
UNB	Automatic Fusion of New Satellite Images & Method for Generating Natural Colour Satellite Images	Remote sensing, satellite imagery
MUN	DESIRE Software	IT
St. FX	Real Time Billing	IT
MUN	Virtual Marine Technology (Spin-off)	IT
Acadia	Acadia's Management Interview Series Video Database	IT, educational resources
Technology Showcase - 2006		
DAL	New Catalysts for Industrially Significant Chemical Transformations	Biotech
DAL	Oscillation Spirometer to Measure Lung Function	Biotech
MUN	The Pygopus Gene and Its Role in Cervical and Ovarian Cancers	Biotech
MUN	* Novel Chlorogenic Acid-Based Peptidomimetic with Promising Anti-Fungal Activity	Biotech
St. FX	Fluid-Particle Modeler - Dissipative Particle Dynamics Simulation Software	ICT
MUN	Molecular Platforms for a Binary Information Recording Medium	ICT
MUN	Technology for Location-referent Mobile E-commerce	ICT
MSVU	SIMergency: Virtual Environment Training Software for Emergency Responders	ICT
Acadia	An in situ Microscale Device for Monitoring Environmental Contaminants	Sciences & Environment
NSAC	Gene Sequence Encoding an Enzyme Which Affects After-cooking Darkening in French-fried Potatoes	Sciences & Environment
DAL	Predictors and Compositions of Environmentally Safe Glass	Sciences & Environment
Acadia	Mutual Authentication, Encryption and Decryption System for Radio Frequency Identification	Engineering
DAL	Non-Destructive Damage Detection Method for Joints in Pipes	Engineering
UNB	Research and Innovation	General
Technology Showcase - 2007		
DAL	Mutations in a novel gene causes schnyder crystalline corneal dystrophy	Health and Related Sciences
UPEI	Spore-Based Vaccine Against Microsporidial Gill Disease	Health and Related Sciences
DAL	Battling obesity: a novel target that regulates adipocyte production and metabolism	Health and Related Sciences
Mt. A	Boron-Containing Compounds	Health and Related Sciences
MUN	New biodegradable polymers for use in drug delivery	Health and Related Sciences
DAL	Broad range molecular weight proteome fractionation by post	Health and Related Sciences

UPEI	Atlantic Centre for Bioproducts Valuation (ACBV)	Health and Related Sciences
Dal	A non-destructive damage detection method for joints in Pipes	Natural Resources and Energy
UNB	Single Sided X-Ray Imaging Technology:	Natural Resources Energy
SMU	Ionic liquids, liquid polymers, and porous solids for use in storage, separation and transport of highly reactive gases	Environmental Sciences and Technology
Acadia	In situ Trace Metal Sampling, Device for Waters Sediments & Soils	Environmental Sciences and Technology
SMU	Green Roof Technology as a solution to reducing environmental impact from urban infrastructure	Environmental Sciences and Technology
ST. FX	Soil Gas Capture and Sampling System	Environmental Sciences and Technology
Mt. A	Digital security solutions	ICT
UNB	MRI Industrial Measurement Technology	ICT
MUN	Technology for Locationreferent Mobile E-commerce	ICT
SMU	Data Mining Algorithms for use in generating new knowledge from large data repositories	ICT
St. FX	DPD "Fluidix" Modeling	ICT
UNB	GPS Real Time Kinematic Software	ICT
MUN	Non-magnetic High Density Storage Medium	ICT
UNB	Linehaul Scheduling system	ICT
Acadia	Mutual Authentication & Cryptography System for Low Cost RFID Tags	ICT

