

*Federal Partners
in Technology Transfer* **FPTT** 

Annual Report

2002-2003

**THE VOICE AND RESOURCE FOR TECHNOLOGY TRANSFER
IN FEDERAL LABORATORIES**



Government
of Canada

Gouvernement
du Canada

Canada

There was a strong consensus in five areas that will help build a commercialization agenda for Canada:

- 1) Intellectual Property processes and commercialization support at the public and private sector interface;*
- 2) Financial incentives, investments and taxes to reduce risk;*
- 3) Critical mass in communities and networks;*
- 4) Culture, attitude and national will to innovate; and*
- 5) Entrepreneurial and managerial commercialization skills in Canada.*

These themes are built on the premise that commercialization is fundamentally important to the implementation of Canada's Innovation Strategy, that innovation is a dynamic, interactive process strongly influenced by market realities and that commercialization issues are part of a shared agenda among business, governments, academia, and not-for-profit organizations.

From the workshop report on "Canada's Innovation Strategy: Building Canada's Capacity for Commercialization", March 2003.

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The FPTT Annual Report 2002-2003 is available on the FPTT Web site at www.fptt-pftt.gc.ca

Executive Director's Message



On behalf of the members of Federal Partners in Technology Transfer (FPTT), I am pleased to share our accomplishments for the year 2002-2003. In providing this overview of the fiscal year past, I would especially like to acknowledge the individual accomplishments of the federal laboratories in our network and the dedication and hard work of the FPTT Executive Office staff, situated within the National Research Council Canada.

As we celebrate our sixth year, our report highlights how FPTT helps its members explore the challenges and common issues they face. As both a procurer and a supplier of intellectual property (IP), federal science-based departments and agencies are in a unique situation. Like the private sector, they strive for consistent and common methodologies to guide them in the development of IP practices that cover a range of particular needs. But, unlike the private sector, those practices must protect the dual mandate of government to serve the public good and also to support the private interest of companies through collaboration and revenue-generating work.

The global marketplace has never been more challenging. Canadian industry faces more competition than ever before, and the need to decrease time to market and cut costs has never been greater. The ability to seamlessly transfer technology and know-how from federal labs is key to helping Canadian firms increase their competitive edge.

Technology transfer represents a partnership between the federal labs and agencies, industry and academia, as well as provincial and local governments that is designed to ensure that the public investment in R&D is transferred to the private sector to meet the needs of the marketplace, or for public good. As Canada's only government-wide forum for technology transfer, the FPTT mission is to facilitate this.

By creating a networked community that is able to collectively address issues of mutual concern — whether they are matters of IP management, information on government regulations or the structure of collaborative partnerships — FPTT enables its members to share their knowledge and best practices, and avoid reinventing technology transfer activities every time. Throughout this past year, we have fielded a wide range of queries, directing questioners to a deep pool of shared information.

In addition to its role as clearinghouse for technology transfer intelligence, FPTT has benefited labs by providing career development opportunities, and by recognizing and promoting excellence in federal technology transfer. I congratulate all of those whose exceptional achievements are highlighted in this report.

This past year saw FPTT renew its mandate with its members through an extensive consultative process, and we have set off on a new three-year course that will see us expand and improve upon the services we provide to members. Details on this can be found within.

I hope you will use this report on our activities to better understand and appreciate the value of FPTT and its efforts to support the important work of turning publicly funded technology into knowledge-based commodities.

Morna Paterson
Executive Director

Morna Paterson



FPTT Advisory Council

- **Jacques Lyrette**, Chair, FPTT Advisory Council and Vice-President, Technology and Industry Support, National Research Council Canada
- **Gaétan Boucher**, Director General, Safety Programs, Strategies and Coordination, Transport Canada
- **David Brener**, Director, Knowledge Translation Programs, Canadian Institutes of Health Research
- **Mike Buisson**, Assistant Commissioner, National Police Services, Royal Canadian Mounted Police
- **Gordon Dorrel**, Acting/Assistant Deputy Minister, Research Branch, Agriculture and Agri-Food Canada
- **Yvan Hardy**, Assistant Deputy Minister, Canadian Forest Service, Natural Resources Canada
- **Jean Hollebhone**, Acting Director, Science, Canadian Food Inspection Agency
- **Virendra Jha**, Director General, Space Technologies, Canadian Space Agency
- **Kevin Keogh**, Chief Scientist, Health Canada
- **John Leggat**, Assistant Deputy Minister, Science and Technology, National Defence
- **Margot Montgomery**, Director General, Industrial Research Assistance Program, National Research Council Canada
- **Barry Stemshorn**, Assistant Deputy Minister, Environment Protection Service, Environment Canada
- **Andrei Sulzenko**, Senior Assistant Deputy Minister, Policy Sector, Industry Canada
- **Gerry Turcotte**, President, Communications Research Centre Canada
- **Janet Walden**, Vice-President, Research Partnerships Programs Directorate, Natural Sciences and Engineering Research Council of Canada
- **Wendy Watson-Wright**, Assistant Deputy Minister, Science Sector, Fisheries and Oceans Canada
- **Lorne Heslop**, Chair, FPTT National Committee and Senior Policy Analyst, Agriculture and Agri-Food Canada
- **Morna Paterson**, Executive Director, Federal Partners in Technology Transfer (ex-officio)

FPTT Partners

- Agriculture and Agri-Food Canada
- Atomic Energy of Canada Limited
- Canadian Food Inspection Agency
- Canadian Institutes of Health Research
- Canadian Space Agency
- Communications Research Centre Canada
- Environment Canada
- Fisheries and Oceans Canada
- Health Canada
- Industry Canada
- National Defence
- National Research Council Canada
- Natural Resources Canada
- Natural Sciences and Engineering Research Council of Canada
- Royal Canadian Mounted Police
- Transport Canada

In collaboration with

- Foreign Affairs and International Trade
- Justice Canada
- Public Works and Government Services Canada
- Treasury Board of Canada, Secretariat

FPTT at a Glance

Technology transfer – including the dissemination of knowledge as well as the inventions and innovations that are the products of research – is an essential economic engine for Canada, creating jobs and generating revenue. Government institutions play a key role in technology transfer. A vast array of knowledge is generated in federal research facilities and disseminated via research papers, books, articles and presentations and by the transfer of technology to industry.

The FPTT network acts as a key broker in the process, bringing together people in Canada’s federal science-based departments and agencies to establish common approaches, practices and policies to effectively transfer research, technologies and know-how from government laboratories to the most appropriate receptor. With a core membership of 16 federal science-based departments and agencies and more than 250 of their technology transfer professionals, FPTT offers programs and services to support technology transfer in more than 110 federal laboratories.

Our members are technology transfer specialists with a broad understanding of government intellectual property policies, procedures and regulations. Their business skills, resources and technical expertise result in effective transfer and commercialization of innovations developed in federal laboratories. Linking key regional, national and international associations and networks, FPTT provides members with information, contacts and advice from technology experts around the world. The strength of FPTT is measured by the relationships it builds, the knowledge it helps develop and share, and the technology transfer it enables.

Vision

To see Canada as a world leader in enhancing its socio-economic well-being through the commercial exploitation of publicly funded technology.

Mission

To foster the development of professional capacity within the Canadian government to enhance the effectiveness and efficiency

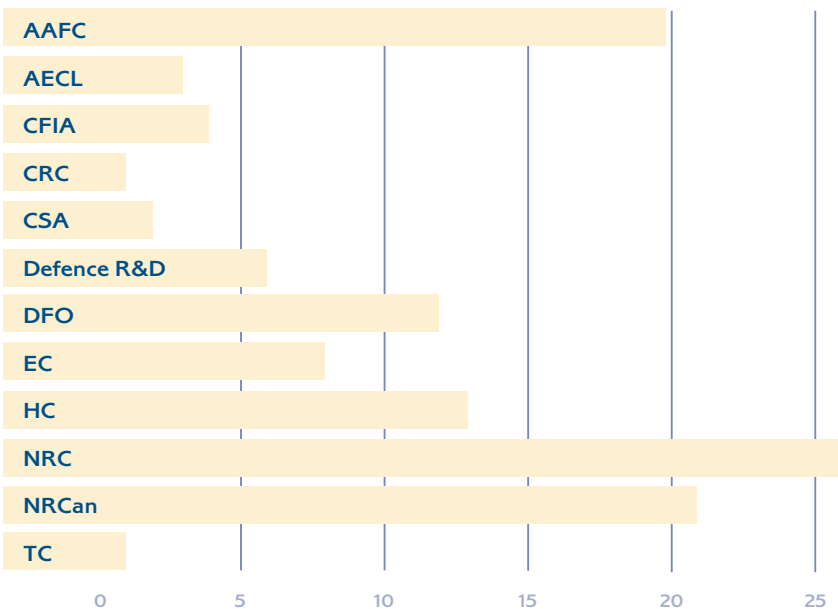
of technology and knowledge transfer and commercialization.

Strategic Objectives

FPTT’s strategic objectives are set by our members and endorsed by the FPTT Advisory Council:

- To provide a forum for knowledge building and exchanging best practices.
- To foster the development of technology transfer skills.
- To provide opportunities to work with leaders in technology transfer and commercialization in Canada and around the world.
- To address horizontal issues related to technology and knowledge transfer and commercialization.
- To assist in the development of an infrastructure of government-wide policies and programs that encourage technology and knowledge transfer.
- To promote public awareness of federal technology and knowledge transfer activities.

Number of Research Facilities by Partner



Key Highlights of 2002-2003

Networking

To provide a forum for knowledge building and exchanging best practices:

- Held workshops, seminars, and bi-monthly meetings in Ottawa and Quebec.
- Established an FPTT Knowledge Management Working Group to advise on a community of practice tool, which would harness knowledge relating to technology transfer and intellectual property management.
- Brought together FPTT members and Industrial Research Assistance Program (IRAP) Industrial Technology Advisors (ITAs) at IRAP Resource Expos.
- Partnered with IRAP, Canadian Technology Network and York Business Network to stage the first Tech-Expo:

The Discovery Marketplace, including a panel discussion on working with federal labs.

- Supported the Association of University Technology Managers-Canada's Basic Licensing Course and included a session on how IP is managed in government.

Professional Development

To foster the development of technology transfer skills and provide opportunities to work with leaders in technology transfer and commercialization in Canada and around the world:

- Brought in experts in the technology transfer field to more than 20 FPTT meetings, with an average attendance at the Ottawa meetings of 40 participants.

- Alerted the technology transfer community in Canada to news, events, training opportunities, tools and relevant books and articles in the bi-weekly FPTT News.

- Organized a national conference on "Strategies for Protecting Intellectual Property", which received high marks for its effectiveness from more than 100 participants.

- Developed a patent strategies workshop attended by more than 45 FPTT members.

- Worked with the Licensing Executives Society (LES) – Canada's Education Committee to develop a marketing and dissemination plan for LES training modules.

Questions, We Get Questions

Each year, FPTT's Executive Office fields numerous questions from across Canada and abroad related to issues ranging from information on certification programs in technology transfer to university equity policies. Some examples from the past year include:

- Under the Treasury Board policy on Awards to Inventors and Innovators, what is the cap on payments from royalties? Can awards be paid out of O&M dollars rather than salary dollars?
- Can you help me find references related to joint IP ownership?
- Does a new license template for free software/shareware exist? Where could I find it?
- Where can I find data on R&D intensity by industry sector?



Research and Advocacy

To address horizontal issues related to technology and knowledge transfer and commercialization and to assist in the development of an infrastructure of government-wide policies and programs that encourage technology and knowledge transfer:

- Participated in the Conference Board of Canada's Innovation Council input to the government's innovation strategy most of which was included in the final recommendations of the strategy.
- Explored a potential model for Canada as part of a fact-finding visit to the U.S. National Technology Transfer Center.
- Represented FPTT at the federal government's first science and technology forum for senior managers of science-based departments and agencies aimed at generating a shared view of future directions and priorities.

- Monitored and shared relevant legislation and regulatory change in Canada and abroad with the technology transfer community in Canada.

Communications and Promotion

To promote awareness of federal technology and knowledge transfer activities:

- Recognized thirty-four (34) individuals, nine (9) science-based departments and agencies and five (5) firms for exceptional work in technology transfer and commercialization.
- Exhibited at numerous events (including the Security Clusters Conference, Technology Transfer and Innovation 2002, Canadian Society for Small Business Entrepreneurs and Ottawa Regional Innovation Forum) to reach a broad community.

- Created a new FPTT look (logo and design) for use in kit folders, displays and other promotional material.
- Created *Technology On The Move*, a new three-panel brochure to provide the public with an at-a-glance overview of FPTT.
- Collaborated with a University of British Columbia spin-off to encourage and promote the use of their online technology transfer marketing and licensing tool, FLINTBOX.
- Briefed foreign delegations from Thailand, Russia, Sweden and Wales on technology transfer in Canada.

Sharing Information

Throughout the year, FPTT holds meetings and seminars that provide critical information to members on a wide range of topics. Among the highlights of 2002-2003:

- Overview of technology transfer activities in member departments and agencies.
- Results of the S&T Forum and the Status of the Federal Innovation Networks of Excellence (FINE) Initiative.
- Science and Technology Intelligence — a focused method of analyzing large amounts of scientific information from many sources leading to a competitive edge.
- Licensing with U.S. and Canadian Federal Partners.
- Retention of Royalties and Fees from Licensing of Crown-owned Intellectual Property.
- Communications Research Centre Canada's landmark patent infringement victory.
- National Research Council Canada's IP Management and Commercialization Strategy Project.
- Health Canada's use of *Communities of Practice* as a mechanism to build knowledge capacity for their "public involvement" initiative.

Technology Transfer Today: A Snapshot of Activity

This section draws extensively from a report by R.S. Schillo entitled “Knowledge Transfer and Commercialization in Canada’s Federal laboratories: Towards Excellence in Research Management”, August 2003 that was prepared for the Prime Minister’s Advisory Council on Science and Technology and from data from Statistics Canada. *(Please note that the data in the tables and charts below compare outputs that are of different importance to departmental mandates and also may not be consistent across departments, therefore comparison between them is of limited validity.)*

Transfer Mechanisms

FPTT members use various mechanisms to transfer and commercialize knowledge and technology and informal communications are possibly one of the most important vehicles for knowledge transfer, as indicated by the great importance of physical proximity to collaboration success. In many cases, companies, especially knowledge-savvy ones, can derive great benefit from ‘no fee’ interactions with the labs. However, the prevalence and intensity of such interactions is hard to measure and document, while more formalized interactions such as R&D collaborations and licenses are easier to track.

Among the more formal mechanisms ▶
for technology transfer are the following:

Mechanisms for Technology Transfer

Interactions with Industry (No fee)

- Academic publications, conference presentations
- Free licences
- Informal interaction
- Certain workshops
- Roundtables
- Informal interactions (technical assistance)
- Patents (public information)
- Publications in trade journals
- Information dissemination (internet, publications)
- Transfer of personnel
- Participation in committees, on advisory boards etc.

Interactions with Industry (For fee or in-kind contributions)

- Licences
- Services
- Collaborations
- Training
- Incubation

Interactions with Government

- Reports
- Consultations
- Publications
- Collaborations
- Participation in workshops and committees

Interactions with research community

- Publications
- Conference presentations
- Patents
- Collaborations
- Participation in workshops and committees

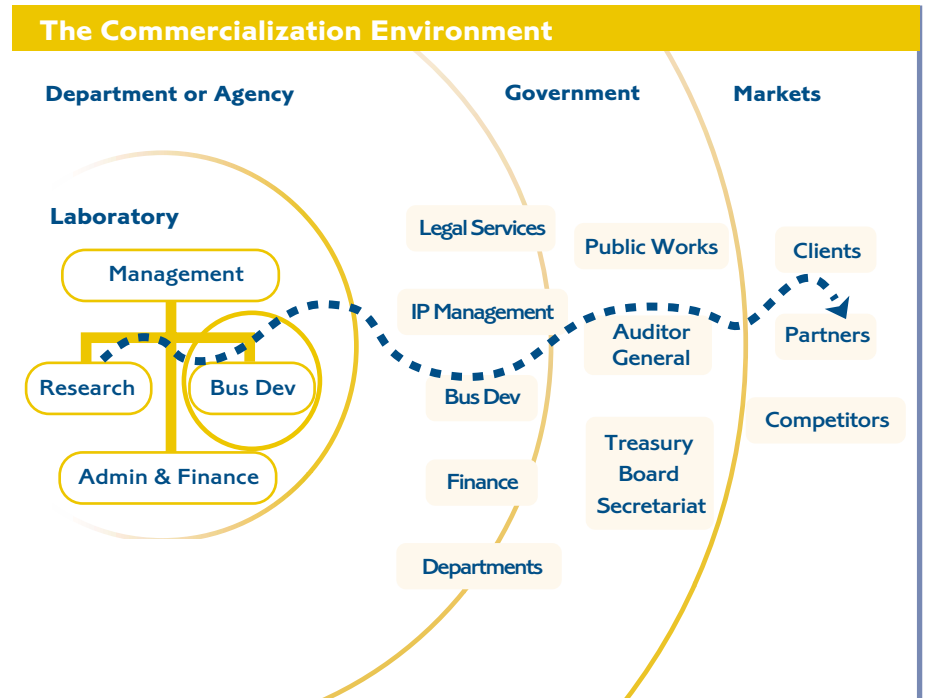
Interaction with public

- Information Dissemination (e.g. through web sites, publications)



The Commercialization Environment

Our members operate in a complex and dynamic environment as illustrated by the diagram below and must have flexible business skills that are not readily translated into rules and guidelines. Sharing knowledge and experience across departments, through the mentoring and information sharing opportunities provided by membership in FPTT, is essential given the complexity and diversity of IP issues. ▶



Contributions to Society

The impact on society of technology transfer is widespread. The following table rates the impacts of public research (which includes the work of FPTT members) and the impact of innovation spending that are ***-well documented, **-partially documented and *-largely undocumented.

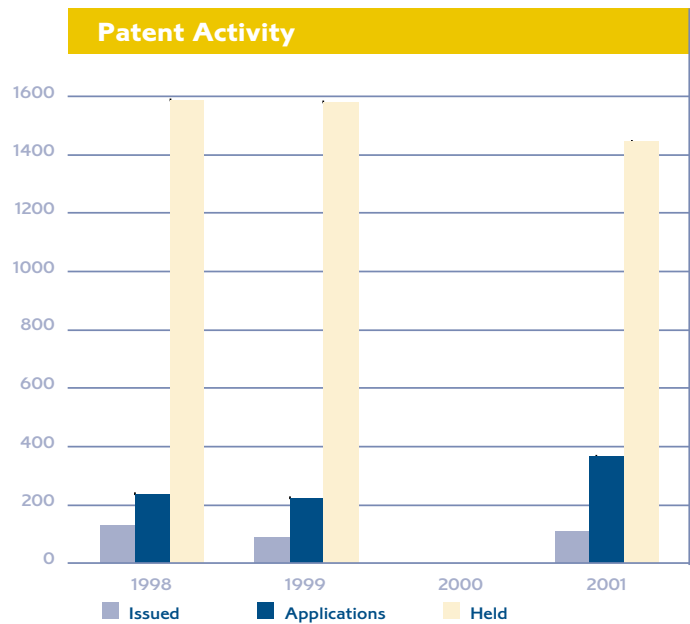
Main domains of impact of public spending	Direct Impacts		Indirect Impacts	
	Short-term	Long-term	Short-term	Long-term ³³
Science Typical impacts	Scientific findings***	Knowledge*	Improved teaching*	Industrial spillovers**
Economy and society Typical impacts	Improved technology**	Improved technical know-how*	Increased productivity**	Improved competitiveness**
Policy Typical impacts	Improved understanding*	Problem-solving*	Increased problem awareness*	Increased general satisfaction*

Source: S. Kublmann. Evaluation of Socio-Economic Impacts of Public R&D (2002). Ratings added by R.S. Schillo.

Other metrics used to measure the performance of our FPTT partners and members include the number of patents granted, the number of licenses negotiated and subsequent revenues generated.

Patent Activity

Although patenting trends are viewed as being of only limited use in assessing the scientific performance of our FPTT Partners and the work of our members, they continue to be a frequently used indicator of the commercial potential of inventions from research facilities.



Note: Data for 2000 is not available



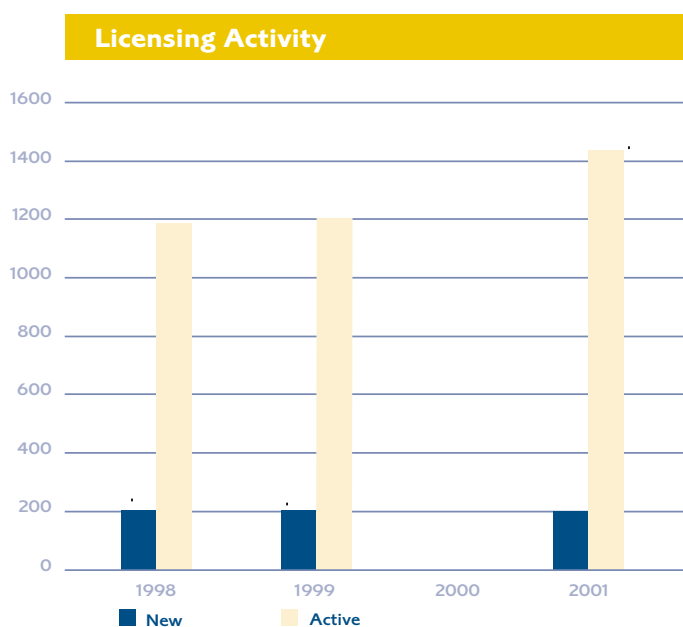
Licensing Activity

Federal research organizations enter into license agreements to transfer the right to use or commercialize a technology to a third party. Three FPTT partners — Natural Resources Canada, the National Research Council Canada and Agriculture and Agri-Food Canada — account for 60-70 percent of the licensing activity.

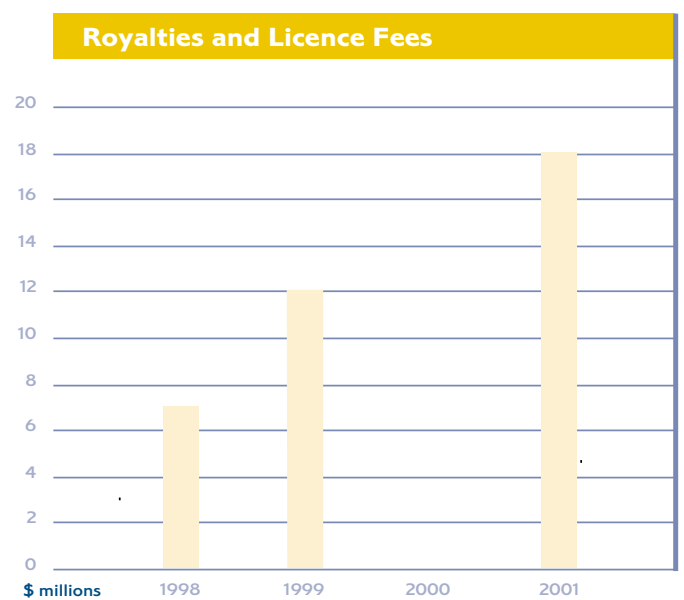


Royalties and License Fees

License fees and royalties have increased across all science-based departments and agencies in the past several years. About 40 percent of all licenses are royalty bearing. Agriculture and Agri-Food Canada, the National Research Council Canada and the Communications Research Centre Canada received 60-90 percent of all revenues in the three years examined.



Note: Data for 2000 is not available



Note: Data for 2000 is not available



2002 FPTT Awards

To meet our objective of raising awareness of federal activities in technology transfer, FPTT honours individuals and teams within Canada's federal science-based departments and agencies and the Canadian private sector who have made significant efforts in the transfer and commercialization of federally developed technology. These FPTT Awards also recognize the federal government's innovators and leaders in technology transfer, whose work fosters an entrepreneurial climate and increases the probability of successful collaboration and commercialization of technology developed in government laboratories.

The winners and the technologies that were successfully commercialized creating benefits for Canada were promoted widely across Canada by the FPTT Executive Office.

Among the criteria used by the distinguished panel of judges:

- Technology transfer effort
- Contribution to Canadian competitiveness, economic growth and standard of living
- Commercial advancement
- Benefits to Canadian firms or sectors

Award Recipients:

FPTT Technology Transfer Award

Defence R&D Canada-Valcartier
Bristol Aerospace Ltd.
SNC Technologies Inc.

Successful development and transfer of liquid pyrophoric infrared decoy flare technology to provide maximum protection of aircrew against infrared-guided missiles.

Sponsored by Perley-Robertson, Hill & McDougall LLP

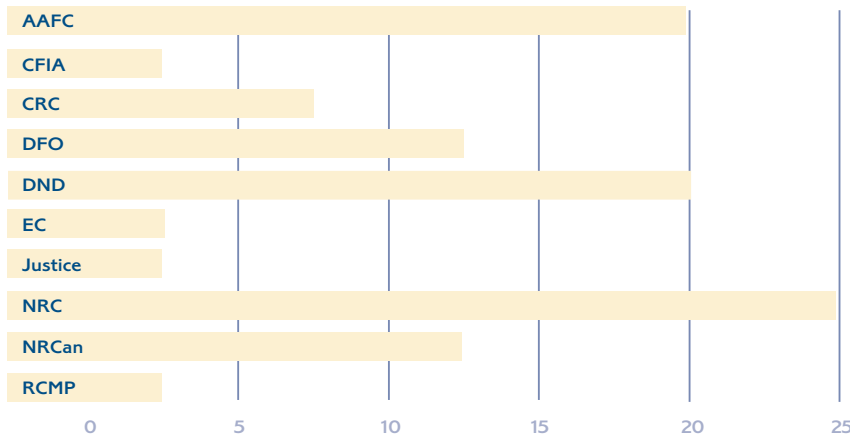
FPTT Technology Transfer Award

Defence R&D Canada-Suffield
National Research Council Canada
Royal Canadian Mounted Police
NBC Team Ltd.

George Cowan Enterprises Ltd.
Successful development and transfer of foam-based bomb mitigation and de-contamination systems.

Sponsored by General Dynamics Canada

Percentage of Award Winners per Partner



◀ From left to right: Keith Belinko FPTT Award recipient and Jacques Lyrette, Chair, FPTT Advisory Council.

FPTT Technology Transfer Award

National Research Council Canada
Ionalytics Corp.

MDS Sciex

Successful development and transfer of high-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS) and the subsequent spin-off of Ionalytics Corp. to develop the next generation systems for mass spectrometry applications.

Sponsored by Ogilvy Renault

FPTT Innovation Award

Viyann Wu

Communications Research Centre

In recognition of exceptional innovation capabilities and scientific contribution to digital television research and standards development.

Sponsored by VWR International

FPTT Leadership Award

Kenneth William Lievers

Agriculture and Agri-Food Canada

In recognition of his outstanding contribution to both the practice of technology transfer and commercialization, and to the development of a culture of innovation and technology transfer in federal government.

Sponsored by Research Money

FPTT Special Recognition Award

Keith Belinko

National Research Council Canada

In recognition of his outstanding leadership in founding the FPTT network and for inspiring a culture of innovation and technology transfer throughout the federal government. Throughout his 20-year career as a public servant, Keith has epitomized the evolution of technology transfer in its journey into public policy. As director of Technology Marketing at CANMET, Natural Resources Canada, he chaired the Inter-departmental Working Group on Intellectual Property Management, the precursor of FPTT, and from 1995-98, he was head of the NRC's Business Relations Office and the Entrepreneurship Program. Understanding the importance of measuring the socio-economic impacts of technology, he launched a number of public and private initiatives, including The Research Impact Network.

Awards Review Committee

James Anglehart

Ogilvy Renault

Ron Freedman

The Impact Group Inc. (Chair)

Graham Taylor

Precarn Inc.

Dave Tyrrell

Vertex Intellectual Property Strategies Inc.

Janet Walden

Natural Sciences and Engineering Research Council of Canada

Information on FPTT Award winners, as well as to obtain a copy of the awards nomination form, is available on the FPTT Web site at :

http://www.fppt-pftt.gc.ca/success/awards/main_e.shtml



A Look Ahead



With commercialization clearly established as a cornerstone of the successful implementation of Canada's innovation strategy, it is essential that the country — in particular, its diverse federal research labs — have the capacity to successfully transform innovation into intellectual capital. FPTT is well positioned to support the development of a cohesive and workable set of standards governing the broad application of IP. This is particularly necessary as a growing number of Canadian research institutions engage in R&D projects with other nations.

In its roles as network liaison, information clearinghouse and intellectual property rights advocate, FPTT works to ensure that its members have the means to collectively address issues of mutual concern — including matters of IP management or the structure of collaborative partnerships — without reinventing technology transfer mechanisms every time.

In the fall of 2002, the science-based departments and agencies that are the FPTT partners agreed to support the network for another three years and approved a three-year plan of activities that will enable FPTT to transform its vision of the role of IP as a powerful tool for economic, social and culture development into a practical reality by concentrating on

generating specific tailored outcomes and tangible goals.

The plan outlines measures to provide policy and protection support for the diverse needs of our partners and members. Each program is designed to produce deliverables that contribute directly to supporting FPTT's strategic objectives.

The three-year plan identifies, in line with FPTT objectives, five priorities or strategic directions that will allow FPTT to focus its efforts and resources on key areas. These priorities are:

- An increased focus on knowledge gathering and sharing related to technology transfer;
- Greater emphasis on education and training for professional development;
- More advocacy initiatives to increase understanding of technology transfer issues at all levels;
- Enhance our communications and marketing activities; and
- Increase foresight activities, including trend monitoring and analysis.

Overall, it is evident that FPTT members want access to the best available practices and policies, timely information delivered to their desktops, and valuable insight into how they can move their R&D achievements into the marketplace quickly and effectively. They look to FPTT for support and guidance, recognizing that networking can play a vital part

in helping all of Canada's technology transfer community achieve their goals together.

In its six-year history, FPTT has moved steadily toward accomplishing its mission to foster the development of professional capacity within the Canadian government to enhance the effectiveness and efficiency of technology and knowledge transfer and commercialization. As it moves ahead, FPTT will continue to strive to be the premier organization to provide professional development and networking opportunities for members. It will continue to build relationships within the areas that can help members fulfill their goals, and find new ways of sharing key information with members.

We know that successful collaborations require effort, openness, trust and good will, to form and sustain. We also know that building such partnerships requires a shift in culture but that by pooling expertise we broaden our horizons. By sharing best practices we learn from each other's mistakes as well as from our successes.

The 21st century belongs to knowledge-based economies, with IP the main driving force behind their success. To help Canada remain in the forefront, FPTT will continue to provide leadership and essential support to its members and key stakeholders.