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Science Statistics

Biotechnology scientific activities in federal government departments and agencies, 2007/2008

March 2009 edition

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User information

Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published

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Highlights

Biotechnology scientific activities in federal government departments and agencies, 2007/2008

- The federal government spent $921 million on science and technology activities in biotechnology in the fiscal year 2007/2008, up 4.6% over the previous fiscal year in current dollars (Table 1-3).
- Of the total, 29% went to intramural activities, and the remaining 71% to extramural performers (Table 1-2).
- Intramural spending consists of in-house activities performed by the government department or agency. Extramural spending consists of contracts or grants to organizations and individuals outside the department, such as business enterprises and higher education.
- The higher education sector continued to be the major recipient of spending on science and technology (S&T) in biotechnology directed to extramural performers, accounting for 80% of the total (Table 1-2).
- The vast majority (95%) of total S&T spending went to research and development activities (Table 1-1).
- A total of 2,112 full-time equivalent federal government personnel were dedicated to biotechnology S&T activities. About three-quarters of these personnel were dedicated to research and development (Table 5-1).

Analysis

Biotechnology scientific activities in federal government departments and agencies, 2007/2008

Data on science and technology (S&T) expenditures and full-time equivalent personnel allocated to biotechnology for fiscal year 2007/2008 were collected from selected federal government departments and agencies.

The federal government biotechnology S&T data comprise expenditures on research and development (R&D) and related scientific activities (RSA) for both intramural (in-house) and extramural performers (business enterprises, higher education, etc.) and the full-time equivalent personnel associated with S&T activities.

The federal government's S&T expenditures on biotechnology in 2007/2008 reached $921 million, an increase of 4.6% over 2006/2007 (Table 1-3). Spending on biotechnology S&T represents 9% of total federal S&T expenditures ($10.2 billion) (Table 3).

The federal government allocated 29% ($263 million) of its biotechnology S&T spending to in-house activities. Extramural performers received $658 million (71%) of the federal government biotechnology S&T spending in 2007/2008 (Table 1-2).

The higher education sector continued to be the major recipient of extramural funding, receiving $529 million (80%) of federal biotechnology extramural S&T spending. Canadian Institutes of Health Research ($410 million), the Natural Sciences and Engineering Research Council of Canada ($70 million) and Canada Foundation for Innovation ($44 million) when combined, represent 99% of the federal biotechnology S&T funding provided to the higher education sector in 2007/2008 (Table 1-2).

Research and development activities received the majority of federal biotechnology spending ($874 million or 95% of total S&T spending) (Table 1-1). Spending on biotechnology R&D represented 13% of total federal R&D expenditures in 2007/2008 (Table 4).

A total of 2,112 full-time equivalent (FTE) federal government personnel were dedicated to biotechnology S&T activities, representing an increase of 9.5% over 2006/2007. Of the total FTE personnel, 1,622 FTE personnel (77%) were dedicated to research and development activities (Table 5-1).

The largest share of federal government personnel in biotechnology activities was technicians at 41% (862 FTE), followed by scientific and professional personnel at 39% (827 FTE) and other at 20% (424 FTE) (Table 5-2).

Related products

Selected publications from Statistics Canada

88-202-X	Industrial Research and Development: Intentions
88-204-X	Federal Scientific Activities
88-221-X	Gross Domestic Expenditures on Research and Development in Canada and the Provinces
88-522-X	Science and Technology Activities and Impacts: A Framework for a Statistical Information
88F0006X	Science, Innovation and Electronic Information Division Working Papers
88F0017M	Science, Innovation and Electronic Information Division Research Papers

Selected CANSIM tables from Statistics Canada

358-0001	Gross domestic expenditures on research and development, by science type and by funder and performer sector, annual
358-0024	Business enterprise research and development (BERD) characteristics, by industry group based on the North American Industry Classification System (NAICS), annual
358-0026	Intellectual property management, by federal departments and agencies indicators, annual

Selected surveys from Statistics Canada

4201	Research and Development in Canadian Industry
4204	Research and Development of Canadian Private Non-Profit Organizations
4208	Provincial Research Organizations (PRO)
4209	Provincial Government Activities in the Natural Sciences
4210	Provincial Government Activities in the Social Sciences
4212	Federal Science Expenditures and Personnel, Activities in the Social Sciences and Natural Sciences
5109	Higher Education Research and Development Estimates

Selected summary tables from Statistics Canada

- *Research and development performed by the business enterprise sector*
- *Domestic spending on research and development (GERD), funding sector, by province*
- *Domestic spending on research and development (GERD), performing sector, by province*
- *Domestic spending on research and development (GERD)*

Statistical tables

Table 1-1

Federal government science and technology expenditures on biotechnology — By activity and performer

	Intramural	Business enterprise	Higher education	Other performers[1]	Foreign performers	Total
	thousands of dollars					
2007/2008						
Total	**263,048**	**15,436**	**528,830**	**104,282**	**8,952**	**920,548**
Research and development	234,904	14,918	512,148	103,977	8,499	**874,446**
Related scientific activities	28,144	518	16,682	305	453	**46,102**
2006/2007						
Total	**277,830**	**24,507**	**481,398**	**88,787**	**7,565**	**880,087**
Research and development	246,746	23,697	467,216	88,457	7,041	**833,157**
Related scientific activities	31,084	810	14,182	330	524	**46,930**
2005/2006						
Total	**277,264**	**16,702**	**468,595**	**96,895**	**5,374**	**864,830**
Research and development	248,128	16,169	456,824	96,748	4,903	**822,772**
Related scientific activities	29,136	533	11,771	147	471	**42,058**
2004/2005						
Total	**274,868**	**34,043**	**402,621**	**87,992**	**4,637**	**804,161**
Research and development	250,248	33,467	393,321	86,837	4,123	**767,996**
Related scientific activities	24,620	576	9,300	1,155	514	**36,165**
2003/2004						
Total	**255,996**	**27,361**	**379,116**	**88,656**	**5,110**	**756,239**
Research and development	234,891	26,038	370,359	87,412	4,591	**723,291**
Related scientific activities	21,105	1,323	8,757	1,244	519	**32,948**

1. "Other performers" includes Canadian non-profit institutions and provincial and municipal governments.

Table 1-2

Federal government science and technology expenditures on biotechnology — By department or agency and by performer, 2007/2008

	Intramural	Business enterprise	Higher education	Other performers[1]	Foreign performers	Total
	thousands of dollars					
Total	**263,048**	**15,436**	**528,830**	**104,282**	**8,952**	**920,548**
Agriculture and Agri-Food Canada	65,325	0	0	0	0	**65,325**
Canada Foundation for Innovation	0	0	43,565	0	0	**43,565**
Canadian Food Inspection Agency	17,209	50	309	0	0	**17,568**
Canadian Institutes of Health Research	22,500	0	409,671	9,087	5,652	**446,910**
Environment Canada	473	18	0	0	0	**491**
Fisheries and Oceans Canada	3,724	0	50	0	0	**3,774**
Genome Canada	2,724	0	0	89,862	0	**92,586**
Health Canada	10,833	103	9	24	25	**10,994**
Industry Canada	8,685	7,243	0	0	0	**15,928**
National Defence	5,413	977	371	129	949	**7,839**
National Research Council Canada	108,051	5,370	0	470	1,200	**115,091**
Natural Resources Canada	8,375	1,108	809	32	0	**10,324**
Natural Sciences and Engineering Research Council of Canada	3,637	567	70,395	4,571	1,064	**80,234**
Public Health Agency of Canada	5,833	0	326	107	22	**6,288**
Social Sciences and Humanities Research Council of Canada	266	0	3,325	0	40	**3,631**

1. "Other performers" includes Canadian non-profit institutions and provincial and municipal governments.

Table 1-3

Federal government science and technology expenditures on biotechnology — By department or agency

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
	thousands of dollars				
Total	**756,239**	**804,161**	**864,830**	**880,087**	**920,548**
Agriculture and Agri-Food Canada	63,936	67,073	67,073	67,073	65,325
Canada Foundation for Innovation	78,261	71,005	109,697	70,625	43,565
Canadian Food Inspection Agency	12,265	12,399	16,109	16,256	17,568
Canadian Institutes of Health Research	271,135	299,230	323,930	371,501	446,910
Environment Canada	1,747	1,933	1,511	1,024	491
Fisheries and Oceans Canada	2,916	3,860	3,860	3,774	3,774
Genome Canada	80,701	82,663	91,108	84,022	92,586
Health Canada	14,592	10,665	14,186	13,801	10,994
Industry Canada	23,630	31,813	19,516	23,584	15,928
National Defence	13,850	13,453	13,203	15,464	7,839
National Research Council Canada	121,389	134,319	122,728	120,964	115,091
Natural Resources Canada	8,537	8,173	8,383	11,056	10,324
Natural Sciences and Engineering Research Council of Canada	59,204	63,143	67,867	70,957	80,234
Public Health Agency of Canada	0	610	1,018	5,308	6,288
Social Sciences and Humanities Research Council of Canada	4,076	3,822	4,641	4,678	3,631

Table 2-1

Federal government expenditures on biotechnology in research and development activities — By department or agency and by performer, 2007/2008

	Intramural	Business enterprise	Higher education	Other performers[1]	Foreign performers	Total
	thousands of dollars					
Total	**234,904**	**14,918**	**512,148**	**103,977**	**8,499**	**874,446**
Agriculture and Agri-Food Canada	64,153	0	0	0	0	**64,153**
Canada Foundation for Innovation	0	0	43,565	0	0	**43,565**
Canadian Food Inspection Agency	10,697	50	309	0	0	**11,056**
Canadian Institutes of Health Research	22,095	0	402,297	8,945	5,652	**438,989**
Environment Canada	390	18	0	0	0	**408**
Fisheries and Oceans Canada	3,013	0	50	0	0	**3,063**
Genome Canada	2,724	0	0	89,862	0	**92,586**
Health Canada	4,849	0	0	0	25	**4,874**
Industry Canada	0	7,243	0	0	0	**7,243**
National Defence	5,413	977	371	129	949	**7,839**
National Research Council Canada	106,124	5,370	0	470	1,200	**113,164**
Natural Resources Canada	7,208	967	583	0	0	**8,758**
Natural Sciences and Engineering Research Council of Canada	3,200	293	61,920	4571	655	**70,639**
Public Health Agency of Canada	4,797	0	60	0	18	**4,875**
Social Sciences and Humanities Research Council of Canada	241	0	2,993	0	0	**3,234**

1. "Other performers" includes Canadian non-profit institutions and provincial and municipal governments.

Table 2-2
Federal government expenditures on biotechnology in research and development activities — By department or agency

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
	thousands of dollars				
Total	**723,291**	**767,996**	**822,772**	**833,157**	**874,446**
Agriculture and Agri-Food Canada	63,936	67,073	67,073	67,073	64,153
Canada Foundation for Innovation	78,261	71,005	109,697	70,625	43,565
Canadian Food Inspection Agency	8,378	7,857	9,968	10,090	11,056
Canadian Institutes of Health Research	268,290	296,378	319,719	365,259	438,989
Environment Canada	962	1,357	873	379	408
Fisheries and Oceans Canada	2,320	3,360	3,360	3,063	3,063
Genome Canada	80,701	82,663	91,108	84,022	92,586
Health Canada	7,462	5,557	7,988	6,873	4,874
Industry Canada	17,305	22,001	8,167	13,074	7,243
National Defence	13,780	13,316	13,178	15,067	7,839
National Research Council Canada	118,819	131,183	120,561	118,445	113,164
Natural Resources Canada	7,238	7,210	7,702	9,150	8,758
Natural Sciences and Engineering Research Council of Canada	52,277	55,755	59,269	62,228	70,639
Public Health Agency of Canada	0	0	0	3,681	4,875
Social Sciences and Humanities Research Council of Canada	3,562	3,281	4,109	4,128	3,234

Table 3
Comparison of federal government total science and technology expenditures and biotechnology science and technology expenditures, by department or agency, 2007/2008

	Total science and technology expenditures[1]	Biotechnology science and technology expenditures	Biotechnology science and technology expenditures as a percentage of total science and technology expenditures
	thousands of dollars		percent
Total	**10,164,065**	**920,548**	**9**
Agriculture and Agri-Food Canada	418,290	65,325	16
Canada Foundation for Innovation	316,413	43,565	14
Canadian Food Inspection Agency	51,005	17,568	34
Canadian Institutes of Health Research	964,378	446,910	46
Environment Canada	608,737	491	0
Fisheries and Oceans Canada	281,759	3,774	1
Genome Canada	95,110	92,586	97
Health Canada	367,869	10,994	3
Industry Canada	546,491	15,928	3
National Defence	450,008	7,839	2
National Research Council Canada	754,639	115,091	15
Natural Resources Canada	601,409	10,324	2
Natural Sciences and Engineering Research Council of Canada	1,020,749	80,234	8
Public Health Agency of Canada	73,986	6,288	8
Social Sciences and Humanities Research Council of Canada	686,809	3,631	1
Other	2,926,413	..	..

1. Federal science expenditures and personnel 2008/2009 survey.

Table 4

Comparison of federal government total research and development expenditures and biotechnology research and development expenditures, by department or agency, 2007/2008

	Total research and development expenditures[1]	Biotechnology research and development expenditures	Biotechnology research and development expenditures as a percentage of total research and development expenditures
	thousands of dollars		percent
Total	**6,481,196**	**874,446**	**13**
Agriculture and Agri-Food Canada	359,637	64,153	18
Canada Foundation for Innovation	316,413	43,565	14
Canadian Food Inspection Agency	19,945	11,056	55
Canadian Institutes of Health Research	947,283	438,989	46
Environment Canada	221,511	408	0
Fisheries and Oceans Canada	75,182	3,063	4
Genome Canada	95,110	92,586	97
Health Canada	54,736	4,874	9
Industry Canada	474,496	7,243	2
National Defence	336,076	7,839	2
National Research Council Canada	684,960	113,164	17
Natural Resources Canada	269,736	8,758	3
Natural Sciences and Engineering Research Council of Canada	898,096	70,639	8
Public Health Agency of Canada	35,148	4,875	14
Social Sciences and Humanities Research Council of Canada	544,194	3,234	1
Other	1,148,673	..	..

1. Federal science expenditures and personnel 2008/2009 survey.

Table 5-1
Federal government personnel engaged in biotechnology science and technology activities — By category

	Research and development	Related scientific activities	Administration of extramural research and development programs	Administration of extramural related scientific activities programs	Total
	number				
2007/2008					
Total	**1,380.2**	**482.9**	**242.1**	**7.2**	**2,112.3**
Scientific and professional (includes executive)	529.2	231.9	63.4	2.0	**826.5**
Technical	701.5	153.7	6.5	0.0	**861.7**
Other [1]	149.5	97.3	172.2	5.2	**424.2**
2006/2007					
Total	**1,415.0**	**293.0**	**214.0**	**7.0**	**1,929.0**
Scientific and professional (includes executive)	570.0	169.0	54.0	2.0	**795.0**
Technical	623.0	76.0	4.0	0.0	**703.0**
Other [1]	222.0	48.0	156.0	5.0	**431.0**
2005/2006 [r]					
Total	**1,326.0**	**296.0**	**237.0**	**9.0**	**1,868.0**
Scientific and professional (includes executive)	561.0	173.0	47.0	4.0	**785.0**
Technical	544.0	92.0	5.0	0.0	**641.0**
Other [1]	221.0	31.0	185.0	5.0	**442.0**
2004/2005					
Total	**1,316.0**	**262.0**	**205.0**	**9.0**	**1,792.0**
Scientific and professional (includes executive)	505.0	159.0	38.0	4.0	**706.0**
Technical	577.0	69.0	12.0	0.0	**658.0**
Other [1]	234.0	34.0	155.0	5.0	**428.0**
2003/2004					
Total	**1,368.0**	**271.0**	**186.0**	**15.0**	**1,840.0**
Scientific and professional (includes executive)	535.0	161.0	46.0	9.0	**751.0**
Technical	616.0	73.0	4.0	0.0	**693.0**
Other [1]	217.0	37.0	136.0	6.0	**396.0**

1. Includes administrative and foreign service, administrative support, operational and military personnel.
Note(s): Personnel counts are reported as full-time equivalents.

Table 5-2
Federal government personnel engaged in biotechnology science and technology activities — By department or agency and by category, 2007/2008

	Scientific and professional	Technical	Other [1]	Total
	number			
Total	**826.5**	**861.7**	**424.2**	**2,112.3**
Agriculture and Agri-Food Canada	189.0	325.0	38.0	**552.0**
Canada Foundation for Innovation	3.0	3.0	2.0	**8.0**
Canadian Food Inspection Agency	62.5	106.9	12.2	**181.6**
Canadian Institutes of Health Research	30.0	0.0	159.0	**189.0**
Environment Canada	13.4	0.0	2.0	**15.4**
Fisheries and Oceans Canada	23.9	36.9	2.3	**63.1**
Genome Canada	11.2	3.5	1.8	**16.5**
Health Canada	59.9	19.8	9.3	**89.0**
Industry Canada	62.1	0.0	31.6	**93.7**
National Defence	26.8	23.6	0.0	**50.4**
National Research Council Canada	265.0	300.0	147.0	**712.0**
Natural Resources Canada	44.5	21.0	2.0	**67.5**
Natural Sciences and Engineering Research Council of Canada	16.0	0.0	11.0	**27.0**
Public Health Agency of Canada	19.0	22.0	4.0	**45.0**
Social Sciences and Humanities Research Council of Canada	0.2	0.0	2.0	**2.2**

1. Includes administrative and foreign service, administrative support, operational and military personnel.
Note(s): Personnel counts are reported as full-time equivalents.

Table 6

Federal government personnel engaged in biotechnology research and development activities, by department or agency and by category, 2007/2008

	Scientific and professional	Technical	Other [1]	Total
	number			
Total	**592.6**	**708.0**	**321.7**	**1,622.3**
Agriculture and Agri-Food Canada	183.0	324.0	34.0	**541.0**
Canada Foundation for Innovation	3.0	3.0	2.0	**8.0**
Canadian Food Inspection Agency	35.4	45.2	5.2	**85.8**
Canadian Institutes of Health Research	30.0	0.0	156.0	**186.0**
Environment Canada	8.4	0.0	0.5	**8.9**
Fisheries and Oceans Canada	17.7	36.9	1.3	**55.9**
Genome Canada	11.2	3.5	1.8	**16.5**
Health Canada	22.2	19.8	1.5	**43.5**
Industry Canada	2.2	0.0	0.6	**2.8**
National Defence	26.8	23.6	0.0	**50.4**
National Research Council Canada	185.0	210.0	103.0	**498.0**
Natural Resources Canada	38.5	20.0	1.0	**59.5**
Natural Sciences and Engineering Research Council of Canada	14.0	0.0	10.0	**24.0**
Public Health Agency of Canada	15.0	22.0	3.0	**40.0**
Social Sciences and Humanities Research Council of Canada	0.2	0.0	1.8	**2.0**

1. Includes administrative and foreign service, administrative support, operational and military personnel.
Note(s): Personnel counts are reported as full-time equivalents.

Table 7

Comparison of federal government total science and technology personnel and biotechnology science and technology personnel, by department or agency, 2007/2008

	Total science and technology personnel [1]	Biotechnology science and technology personnel	Biotechnology personnel in science and technology as a percentage of total science and technology personnel
	number		percent
Total	**35,748.1**	**2,112.3**	**6**
Agriculture and Agri-Food Canada	2,362.2	552.0	23
Canada Foundation for Innovation	60.0	8.0	13
Canadian Food Inspection Agency	502.2	181.6	36
Canadian Institutes of Health Research	406.0	189.0	47
Environment Canada	3,439.0	15.4	0
Fisheries and Oceans Canada	1,825.3	63.1	3
Genome Canada	17.5	16.5	94
Health Canada	2,969.4	89.0	3
Industry Canada	1,012.4	93.7	9
National Defence	1,979.2	50.4	3
National Research Council Canada	4,190.0	712.0	17
Natural Resources Canada	3,071.4	67.5	2
Natural Sciences and Engineering Research Council of Canada	336.0	27.0	8
Public Health Agency of Canada	506.3	45.0	9
Social Sciences and Humanities Research Council of Canada	189.0	2.2	1
Other	12,882.2	..	..

1. Federal science expenditures and personnel 2008/2009 survey.
Note(s): Personnel counts are reported as full-time equivalents.

Table 8
Comparison of federal government total research and development personnel and biotechnology research and development personnel, by department or agency, 2007/2008

	Total research and development personnel[1]	Biotechnology research and development personnel	Biotechnology personnel in research and development as a percentage of total research and development personnel
	number		percent
Total	**15,637.5**	**1,622.3**	**10**
Agriculture and Agri-Food Canada	2,076.3	541.0	26
Canada Foundation for Innovation	60.0	8.0	13
Canadian Food Inspection Agency	148.0	85.8	58
Canadian Institutes of Health Research	399.0	186.0	47
Environment Canada	962.0	8.9	1
Fisheries and Oceans Canada	496.6	55.9	11
Genome Canada	17.5	16.5	94
Health Canada	362.8	43.5	12
Industry Canada	353.0	2.8	1
National Defence	1,620.2	50.4	3
National Research Council Canada	3,684.0	498.0	14
Natural Resources Canada	1,428.4	59.5	4
Natural Sciences and Engineering Research Council of Canada	295.0	24.0	8
Public Health Agency of Canada	234.3	40.0	17
Social Sciences and Humanities Research Council of Canada	133.0	2.0	2
Other	3,367.4	..	..

1. Federal science expenditures and personnel 2008/2009 survey.
Note(s): Personnel counts are reported as full-time equivalents.

Methodology

Definitions

Biotechnology

The application of science & technology (S&T) to living organisms as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services.

Natural sciences and engineering

The natural sciences and engineering (NSE) field embraces the disciplines of study concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical, life and physical sciences.

Social sciences and humanities

The social sciences and humanities (SSH) field embraces all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, business administration and commerce, information and knowledge management, criminology, demography, economics, geography, history, languages, literature and linguistics, law, library science, philosophy, political science, psychology, religious studies, social work, sociology, and urban and regional studies.

Scientific research and experimental development (R&D)

Creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge and to use this knowledge in new applications.

The central characteristic of R&D is an appreciable element of novelty and of uncertainty. New knowledge, products or processes are sought. The work is normally performed by, or under the supervision of, persons with postgraduate degrees in the natural sciences or engineering.

An R&D project generally has three characteristics:

- a substantial element of uncertainty, novelty and innovation;
- a well-defined project design;
- a report on the procedures and results of the projects.

Related scientific activities (RSA)

Those activities which complement and extend R&D by contributing to the generation, dissemination and application of scientific and technological knowledge.

Intramural performance

Where the S&T activities are managed and carried out primarily by federal government employees they are classified as intramural S&T. Even where major components of the project are provided by outside agencies, such as computer

services, laboratory construction, testing of prototype equipment, if the planning, supervision, reporting, and key operating functions are performed by federal personnel, then the activity is considered to be intramural. This also applies to S&T activities carried out by a department or agency on behalf of another federal department or agency on a cost recovery basis.

The intramural expenditures reported for scientific activities are those direct costs, including salaries, associated with scientific programs. These costs include that portion of a program's contribution to employee benefit plans (e.g., superannuation) which is applicable to the scientific personnel within the program. Non-program ("indirect") costs such as the value of services provided by other departments without charge and accommodation provided by the reporting program are to be excluded.

Administration of extramural programs

The costs of identifiable units engaged in the administration of contracts and grants and contributions for scientific activities that are to be performed outside the Federal Government. These expenditures are broken down by the type of scientific activity supported, i.e., R&D or RSA.

Extramural performance

Groups being funded for S&T activities by the federal government sector. These include:

Business enterprise
This sector is composed of business and government enterprises, including public utilities and government owned firms. Incorporated consultants providing scientific and engineering services are also included. Industrial research institutes located at Canadian universities are considered to be in the higher education sector.

Higher education
This sector is composed of all universities, colleges of technology and other institutes of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of, administered by, or associated with the higher education establishments.

Canadian non-profit institutions
Charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits comprise this sector. Canadian non-profit institutions primarily serving or controlled by another sector should be included in the controlling sector.

Provincial and municipal governments
Departments and agencies of these governments form this sector. Government enterprises, such as provincial utilities are included in the Business enterprise sector, and hospitals in the Canadian non-profit institutions.

Foreign performers
All foreign government agencies, foreign companies (including foreign subsidiaries of Canadian firms), international organizations, non-resident foreign nationals and Canadians studying or teaching abroad, are included in this sector.

Other performers
This sector includes provincial research councils and individuals or organizations in Canada not belonging to any of the above sectors.

Personnel

Intramural expenditure data should be supported by data on the personnel devoted to scientific activities by all the employees engaged in these activities.

Scientific and professional
People in jobs that require at least one academic degree or nationally recognized professional qualification (e.g., Professional Engineer P.Eng.), as well as those with equivalent experience.

Technical
People in jobs that require specialized vocational or technical training beyond the secondary level (e.g., community colleges and technical institutes) as well as those with experience equivalent to this training.

Other
Clerical, secretarial, administrative, operational and other support personnel.
In regard to personnel resources there are two caveats:

- where the S&T activities are a part of the program being reported, only the auxiliary staff relevant to the S&T activities are reported on a prorated basis;
- whenever financial and administrative support is provided from another program, that support is allocated to the S&T resources for the program being reported.

Full-time equivalent (FTE)

A measure of the time actually devoted to the conduct of scientific activities. An employee who is engaged in scientific activities for a half a year has a full-time equivalence of 0.5. Personnel data reported should be consistent with expenditure data.