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Federal Scientific Activities

2007/2008

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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

Federal Scientific Activities, 2007/2008

- Preliminary figures for spending by the federal government on science and technology (S&T) for 2007/2008 will amount to $9.5 billion, 64% of which will be allocated to research and development (R&D) and 36% to related scientific activities (RSA). Relative to 2006/2007, this is a decrease in federal spending of 1.3% on S&T and 3.7% on RSA. (Table 1-1)

- Between 2001/2002 and 2007/2008, federal government spending on S&T grew 16.7% (in current dollars). (Table 1-1)

- In 2007/2008, the federal government departments and agencies with the largest expenditures in S&T will be the Natural Sciences and Engineering Research Council ($905 million), the Canadian Institutes of Health Research ($876 million), the National Research Council of Canada ($757 million), Statistics Canada ($641 million) and the Social Sciences and Humanities Research Council of Canada ($622 million). These five agencies will account for over 40% of the federal government's total spending on S&T. (Table 1-2)

- The share of federal S&T spending to be allocated to the natural sciences will be $7.2 billion in 2007/2008 or 76% (Table 1-6). Only 31% of the $2.3 billion that is intended for the social sciences will be going to R&D, with the rest for RSA, such as data collection for general purposes, maintaining national standards and testing, feasibility studies and policy research. (Tables 1-6 and 1-7)

- Federal intramural spending on S&T, defined as all activities primarily performed by federal employees, will represent 52% of all federal spending on S&T, up 8.6% from 2003/2004. (Table 1-6)

- Federal intramural R&D spending on S&T will represent 47% of all federal intramural spending on S&T, up 12.2% from 2003/2004. (Table 2-1)

- In 2007/2008, the federal government departments and agencies with the largest intramural expenditures in S&T will be Statistics Canada ($641 million), the National Research Council of Canada ($612 million), Environment Canada ($510 million) and Natural Resources Canada ($482 million). These four department and agencies will account for over 45% of the federal government's total intramural spending on S&T. (Table 2-2)

- Between 2003/2004 and 2007/2008, federal extramural spending on S&T will rise by $374 million. In 2007/2008, the higher education sector will be receiving the majority of federal extramural spending on S&T (63%). The business enterprise sector will account for 23%, while foreign performers will account for 7% of total extramural spending on S&T. (Table 3-1)

- In 2007/2008, 35,555 federal government person-years will be devoted to S&T activities, a 2.4% increase from the 34,707 person-years reported for 2003/2004. The majority (56%) of person-years will be engaged in RSA in 2007/2008. (Tables 4-1 and 4-10)

Analysis

Federal Scientific Activities, 2007/2008

Federal extramural expenditures

This section focuses on the federal government's extramural S&T expenditures, that is, expenditures outside its own research centres. The section presents the total payments to business enterprises, higher education sector, Canadian non-profit institutions, provincial and municipal governments, foreign performers and other performers. In 2007/2008, the federal government will be earmarking $4.6 billion, or 48% of its total S&T spending, to extramural activities. The main beneficiaries will be universities ($2.9 billion) and business enterprises ($1.1 billion). In addition, private non-profit institutions will receive $252 million, foreign performers $309 million and others, including individuals and provincial and municipal governments, will receive $68 million. (Tables 1-6 and 3-1)

Business enterprises

- Federal S&T funding in the industry sector will be approximately $1.1 billion in 2007/2008, an increase of 1.8% from planned expenditures in 2006/2007. (Table 3-1) Industry Canada ($293 million), Canadian International Development Agency ($191 million) and National Defence ($138 million) will be the major funders in 2007/2008. (Table 3-2)
- R&D payments in 2007/2008 will be $732 million, a decrease of 0.7% from the $737 million allocated in 2006/2007. (Table 3-1)
- In 2007/2008, the Canadian Space Agency will be spending $101 million, 48% of the R&D contracts total, followed by the Department of National Defence at 32% or $67 million. (Table 3-4)
- Industry Canada payments in the form of R&D grants will amount to $292 million or 56% of the total, followed by the National Research Council of Canada at 18% or $92 million. (Table 3-4)

Higher education

- In 2007/2008, the higher education sector will receive $2.6 billion in funding for R&D activities and $280 million for RSA. The three research councils - the Canadian Institutes of Health Research ($784 million), the Natural Sciences and Engineering Research Council ($725 million), and the Social Sciences and Humanities Research Council ($489 million) - along with the Canada Foundation for Innovation ($430 million) will be the major federal government funders of R&D performed by the higher education sector. (Table 3-3)
- The Natural Sciences and Engineering Research Council and the Canadian Institutes of Health Research will be the largest federal government funders of higher education sector. Their combined spending will account for over 58% of the total R&D that will be funded to the higher education sector. (Table 3-4)

Foreign performers

- Federal S&T payments in 2007/2008 to the foreign performers sector will be approximately $309 million. (Table 3-7)
- The Canadian International Development Agency ($102 million), the International Development Research Centre ($76 million) and the Canadian Space Agency ($43 million) will be the main federal government funders of S&T activities to foreign performers and will account for 72% of all S&T spending in this sector ($309 million). (Table 3-7)

Federal personnel

This section presents data on personnel (in person-years) allocated to S&T activities. A person-year is a measure of the time actually devoted to the conduct of scientific activities. An employee who is engaged in scientific activities for half a year has a person-year full-time equivalence (FTE) of 0.5 person-year. Personnel statistics for 2007/2008 are based on the plans of departments and agencies at the beginning of the fiscal year.

- In 2007/2008, 35,555 federal government person-years will be devoted to S&T activities, a 2.4% increase from the 34,707 person-years reported in 2003/2004. The majority (56%) of person-years will be engaged in RSA in 2007/2008. (Table 4-1)
- The natural sciences and engineering field will account for 70% of the estimated total personnel expenditures in 2007/2008, of which 59% will be engaged in R&D. In contrast, personnel in the social sciences and humanities will account for 30% of the total, only 7% of which will be engaged in R&D. (Table 4-1)
- A breakdown of S&T personnel by category identifies the Scientific and Professional category as the largest, with 46% of all personnel in 2007/2008 falling into this category. It should be noted that Statistics Canada will remain the largest employer of S&T personnel with 5,177 person-years. (Tables 4-5 and 4-11)
- In 2007/2008, the federal departments and agencies that will allocate the largest number of personnel (person-years) to S&T activities will be Statistics Canada (5,177 person-years), the National Research Council of Canada (4,044 person-years), Environment Canada (3,576 person-years) and Natural Resources Canada (3,177 person-years). These institutions will account for 45% of the total person-years assigned to federal S&T activities. (Table 4-5)
- In 2007/2008, the federal departments and agencies that will allocate the largest number of personnel (person-years) to R&D activities will be the National Research Council of Canada (3,593 person-years), Agriculture and Agri-Food Canada (2,142 person-years), Atomic Energy of Canada Limited (1,570 person-years) and National Defence (1,416 person-years). These institutions will account for more than 56% of the total person-years assigned to federal R&D activities. (Table 4-9)
- In 2005/2006, personnel performing S&T activities in federal institutions accounted for 35,102 full-time equivalents (FTE). The majority of these personnel were located in the National Capital Region (19,780 FTE or 56%), while 15,322 FTE were employed outside the National Capital Region, including 3,716 in Quebec and 4,079 in Ontario. (Table 4-14)

Federal expenditures by province and territories

This section presents the geographical distribution of federal S&T activities. Federal departments and agencies must allocate the spending and personnel of their scientific activities by province or territory. Since no effort is made to predict or estimate provincial spending, these expenditures are available only at the end of the fiscal year. This means that provincial data is available only up to 2005/2006.

- The National Capital Region received $2.9 billion, or 34% of total federal government expenditures by geographic region in 2005/2006. (Table 5-1)
- One-quarter of federal S&T expenditures occurred in Ontario ($2.1 billion), while 17% of spending was allocated to Quebec ($1.5 billion). (Table 5-1)
- Ontario received 31% of federal R&D spending allocated geographically, or $1.7 billion, ranking ahead of Quebec ($1.2 billion). (Table 5-3)
- Compared with the regional breakdown in 2004/2005, federal government expenditures on S&T rose in the Yukon, Northwest and Nunavut Territories (46%), Saskatchewan (23%), Prince Edward Island (21%) and Manitoba (12%). (Table 5-1)

- In 2005/2006, the federal government provided $754 million to the business enterprise sector in the form of grants and contracts for R&D activity. Ontario enterprises received $368 million, or 49%, Quebec enterprises received 27%, the Atlantic Provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick) received 7% or $54 million, and British Columbia's share was 11%. (Table 5-3)
- Ontario's higher education sector received almost 28% of the federal government's total $3.3 billion in extramural R&D expenditures. Its share, combined with that of Quebec, accounted for 47% of total extramural R&D spending. (Table 5-3)

Statistical tables

Table 1-1

Federal expenditures — On science and technology and its components

	Current dollars				Gross Domestic Product implicit price index [2]	Constant 2002 dollars			
	Science and technology					Science and technology			
	Main Estimates [1]	Total science and technology	Research and development	Related scientific activities		Main Estimates [1]	Total science and technology	Research and development	Related scientific activities
	millions of dollars				index = 2002	millions of dollars			
1995/1996	164,191	5,693	3,465	2,228	90.2	182,030	6,312	3,841	2,470
1996/1997	156,985	5,694	3,391	2,303	91.6	171,381	6,216	3,702	2,514
1997/1998	149,555	5,509	3,379	2,130	92.7	161,332	5,943	3,645	2,298
1998/1999	145,457	5,802	3,578	2,224	92.3	157,592	6,286	3,876	2,410
1999/2000	151,559	6,252	3,890	2,362	93.9	161,405	6,658	4,143	2,515
2000/2001	156,157	6,707	4,150	2,557	97.8	159,670	6,858	4,243	2,615
2001/2002	165,234	8,169	4,989	3,180	98.9	167,072	8,260	5,044	3,215
2002/2003	170,367	8,014	4,927	3,087	100.0	170,367	8,014	4,927	3,087
2003/2004 r	175,937	8,765	5,462	3,303	103.3	170,317	8,485	5,288	3,197
2004/2005 r	183,290	8,934	5,454	3,480	106.6	171,942	8,381	5,116	3,265
2005/2006 r	185,863	9,449	6,042	3,407	110.2	168,660	8,574	5,483	3,092
2006/2007 p	198,595	9,662	6,062	3,600	112.8	176,059	8,566	5,374	3,191
2007/2008 p	210,311	9,534	6,067	3,467	116.4	180,680	8,191	5,212	2,979

1. Part 1, Government Expenditure Plan, Estimates.
2. CANSIM, Table 384-0036.

Note(s): Due to rounding, components may not add to the totals.

Table 1-2

Federal expenditures — On science and technology, by major departments and agencies

	2003/2004	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**8,765**	**8,934**	**9,449**	**9,662**	**9,534**
Agriculture and Agri-Food Canada	334	340	354	392 [1]	364
Canada Foundation for Innovation	365	271	437	412	442
Canadian Institutes of Health Research	693	759	808	871	876
Canadian International Development Agency	366	415	346	441	404
Canadian Space Agency	269	276	281	327	373
Environment Canada [2]	776	675	696	605	581
Fisheries and Oceans Canada	283	291	292	272	270
Health Canada	332	284	291	330	349
Industry Canada	434	426	579	453	417
National Defence	403	430	434	439	427
National Research Council Canada	778	793	824	774	757
Natural Resources Canada	651	632	542	530	573
Natural Sciences and Engineering Research Council	732	808	864	909	905
Social Sciences and Humanities Research Council of Canada	460 [3]	523 [3]	574 [4]	631 [5]	622 [6]
Statistics Canada	581	610	703	842	641
Total of major departments and agencies	**7,457**	**7,533**	**8,025**	**8,228**	**8,001**
Other	1,308	1,401	1,424	1,434	1,533

1. Includes $30 million for the Agriculture Development Fund Project.
2. Environment Canada resources include large one-time grants and contributions to initiatives outside of the department which did not result in increases in departmental expenditures ($60M for Climate and Atmospheric Sciences in 1999/2000, $50M for the Sustainable Development Technology Fund in 2001/2002, $50M for the Canadian Foundation for Climate and Atmospheric Sciences and $125M for the Sustainable Development Technology Fund in 2003/2004 and $100M for the Sustainable Development Technology Fund in 2004/2005).
3. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 1-3
Federal expenditures — On research and development, by major departments and agencies

	2003/2004	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**5,462**	**5,454**	**6,042**	**6,062**	**6,067**
Agriculture and Agri-Food Canada	252	247	327	364 [1]	335
Atomic Energy of Canada Limited	179	148	182	128	171
Canadian Foundation for Innovation	365	271	437	412	442
Canadian Institutes of Health Research	687	749	795	856	862
Canadian Space Agency	256	263	267	310	355
Environment Canada [2]	264	209	253	220	211
Industry Canada	376	327	478	381	338
National Defence	282	296	349	355	321
National Research Council Canada	699	691	756	706	688
Natural Resources Canada	420	378	281	274	296
Natural Sciences and Engineering Research Council	638	706	755	798	789
Social Sciences and Humanities Research Council of Canada	402 [3]	444 [3]	478 [4]	522 [5]	516 [6]
Total of major departments and agencies	**4,820**	**4,729**	**5,358**	**5,326**	**5,324**
Other	642	725	684	736	743

1. Includes $30 million for the Agriculture Development Fund project.
2. Environment Canada resources include large one-time grants and contributions to initiatives outside of the department which did not result in increases in departmental expenditures ($60M for Climate and Atmospheric Sciences in 1999/2000, $50M for the Sustainable Development Technology Fund in 2001/2002, $50M for the Canadian Foundation for Climate and Atmospheric Sciences and $125M for the Sustainable Development Technology Fund in 2003/2004).
3. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 1-4
Federal expenditures — On related scientific activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**3,303**	**3,480**	**3,407**	**3,600**	**3,467**
Canadian International Development Agency	304	330	288	360	339
Canadian Museum of Civilization	122	121	73	77	77
Environment Canada	512 [1]	466 [2]	443	385	369
Fisheries and Oceans Canada	212	216	214	199	198
Foreign Affairs and International Trade Canada	45	31	68	59	53
Health Canada	229	229	242	268	288
Industry Canada	59	99	102	72	80
Library and Archives Canada	…	83	100	94	94
National Defence	121	134	85	84	107
National Research Council Canada	79	102	68	68	68
Natural Resources Canada	232	254	261	256	277
Natural Sciences and Engineering Research Council	95	102	110	112	116
Parks Canada Agency	102	109	79	78	78
Social Sciences and Humanities Research Council of Canada	58	79	97	109	107
Statistics Canada	562	589	684	826	622
Total of major departments and agencies	**2,732**	**2,944**	**2,914**	**3,047**	**2,873**
Other	571	536	493	553	594

1. Includes $125M for the Sustainable Development Technology Fund funded by Environment Canada.
2. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 1-5
Federal expenditures — On science and technology and its components, by activity

	2003/2004	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**8,765**	**8,934**	**9,449**	**9,662**	**9,534**
Total research and development	**5,462**	**5,454**	**6,042**	**6,062**	**6,067**
Current expenditures	5,033 [1, 2]	5,033 [2]	5,611 [3]	5,633 [4, 5]	5,635 [6]
Administration of extramural programs	257	269	285	280	296
Capital expenditures	172	152	146	149	136
Total related scientific activities	**3,303**	**3,480**	**3,407**	**3,600**	**3,467**
Data collection	1618 [7]	1,702 [8]	1,715	1,770	1,603
Information services	663	679	676	756	803
Special services and studies	615	666	627	662	658
Education support	206	230	259	272	266
Administration of extramural programs	56	58	59	63	65
Capital expenditures	145	146	70	78	73

1. Includes $50M for the Canadian Foundation for Climate and Atmospheric Sciences funded by Environment Canada.
2. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $30 million for the Agriculture Development Fund project.
6. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
7. Includes $125M for the Sustainable Development Technology Fund funded by Environment Canada.
8. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.

Note(s): Due to rounding, components may not add to the totals.

Table 1-6
Federal expenditures — On science and technology, by science and performing sector[1]

	2003/2004	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total sciences	**8,765**	**8,934**	**9,449**	**9,662**	**9,534**
Intramural	4,579	4,685	5,024	5,062	4,973
Business enterprise	1,039	979	1,044	1,042	1,061
Higher education	2,255 [2]	2,396 [2]	2,698 [3]	2,851 [4]	2,870 [5]
Canadian non-profit institutions	514 [6]	444 [7]	307	256	252
Provincial and municipal governments	32	22	19	50 [8]	25
Foreign performers	288	358	306	360	309
Other performers	57	51	51	41	43
Natural sciences	**6,723**	**6,780**	**7,171**	**7,151**	**7,246**
Intramural	3,277	3,341	3,618	3,497	3,601
Business enterprise	998	942	1,010	998	1,019
Higher education	1,761	1,848	2,097	2,182	2,210
Canadian non-profit institutions	459 [6]	397 [7]	248	219	206
Provincial and municipal governments	27	20	17	46 [8]	23
Foreign performers	168	202	147	182	160
Other performers	33	31	34	27	28
Social sciences	**2,042**	**2,155**	**2,279**	**2,511**	**2,288**
Intramural	1,302	1,344	1,406	1,565	1,373
Business enterprise	41	37	34	44	42
Higher education	494 [2]	549 [2]	601 [3]	669 [4]	661 [5]
Canadian non-profit institutions	55	47	59	37	46
Provincial and municipal governments	5	2	2	3	2
Foreign performers	120	156	159	178	150
Other performers	24	21	18	15	15

1. As reported by the funder, the federal government, not by the performers.
2. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes $50 million for the Canadian Foundation for Climate and Atmospheric Sciences and $125 million for the Sustainable Development Technology Fund funded by Environment Canada.
7. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.
8. Includes $30 million for the Agriculture Development Fund project.

Note(s): Due to rounding, components may not add to the totals.

Table 1-7
Federal expenditures — On research and development, by science and performing sector[1]

	2003/2004	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total sciences	**5,462**	**5,454**	**6,042**	**6,062**	**6,067**
Intramural	2,083	2,084	2,414	2,298	2,338
Business enterprise	770	704	791	737	733
Higher education	2,059 [2]	2,173 [2]	2,442 [3]	2,568 [4]	2,590 [5]
Canadian non-profit institutions	340 [6]	260	206	193	183
Provincial and municipal governments	22	15	10	44 [7]	19
Foreign performers	144	185	146	196	174
Other performers	43	33	33	27	30
Natural sciences	**4,860**	**4,814**	**5,370**	**5,346**	**5,348**
Intramural	1,964	1,965	2,289	2,173	2,208
Business enterprise	766	700	788	734	729
Higher education	1,661	1,734	1,974	2,056	2,082
Canadian non-profit institutions	310 [6]	242	186	185	174
Provincial and municipal governments	18	14	9	41 [7]	19
Foreign performers	112	135	100	139	118
Other performers	29	25	23	19	20
Social sciences	**602**	**640**	**672**	**716**	**719**
Intramural	120	118	125	124	131
Business enterprise	4	4	3	3	3
Higher education	398 [2]	439 [2]	469 [3]	512 [4]	509 [5]
Canadian non-profit institutions	30	18	20	8	9
Provincial and municipal governments	4	2	1	3	0
Foreign performers	32	50	46	57	56
Other performers	14	9	10	9	10

1. As reported by the funder, the federal government, not by the performers.
2. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes $50 million for the Canadian Foundation for Climate and Atmospheric Sciences funded by Environment Canada.
7. Includes $30 million for the Agriculture Development Fund project.

Note(s): Due to rounding, components may not add to the totals.

Table 1-8
Federal expenditures — On related scientific activities, by science and performing sector[1]

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total sciences	**3,303**	**3,480**	**3,407**	**3,600**	**3,467**
Intramural	2,496	2,601	2,610	2,764	2,635
Business enterprise	269	275	253	306	329
Higher education	196	223	256	283	280
Canadian non-profit institutions	174	184	101	63	69
Provincial and municipal governments	10	7	9	6	6
Foreign performers	144	173	160	164	135
Other performers	14	18	19	14	13
Natural sciences	**1,864**	**1,965**	**1,801**	**1,805**	**1,897**
Intramural	1,314	1,376	1,328	1,324	1,393
Business enterprise	232	242	221	265	290
Higher education	100	114	123	126	128
Canadian non-profit institutions	148 [2]	155 [3]	62	34	32
Provincial and municipal governments	9	6	8	5	5
Foreign performers	56	67	47	43	42
Other performers	4	6	10	8	8
Social sciences	**1,439**	**1,515**	**1,606**	**1,795**	**1,570**
Intramural	1,182	1,225	1,282	1,440	1,242
Business enterprise	37	33	31	41	39
Higher education	95	109	133	157	152
Canadian non-profit institutions	26	29	39	29	37
Provincial and municipal governments	1	1	1	1	1
Foreign performers	87	106	113	121	93
Other performers	10	12	8	6	5

1. As reported by the funder, the federal government, not by the performers.
2. Includes $125 million for the Sustainable Development Technology Fund funded by Environment Canada.
3. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.

Note(s): Due to rounding, components may not add to the totals.

Table 1-9
Federal expenditures — On science and technology and its components, by activity and performing sector[1], 2005/2006r

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other performers	Total
	millions of dollars							
Total science and technology	**5,024**	**1,044**	**2,698**	**307**	**19**	**306**	**51**	**9,449**
Total research and development	**2,414**	**791**	**2,442**	**206**	**10**	**146**	**33**	**6,042**
In-house research and development	1,840	…	…	…	…	…	…	**1,840**
Research and development contracts	27	185	37	4	1	13	13	**280**
Supporting contracts	103	…	…	…	…	…	…	**103**
Research and development grants and contributions	…	601	2,337 [2]	201	9	115	11	**3,274**
Research fellowships	13	5	68	1	…	19	8	**114**
Administration of extramural programs	285	…	…	…	…	…	…	**285**
Capital expenditures	146	…	…	…	…	…	…	**146**
Total related scientific activities	**2,610**	**253**	**256**	**101**	**9**	**160**	**19**	**3,407**
Data collection	1,588	64	9	21	7	19	7	**1,715**
Information services	588	18	17	15	0 s	35	4	**676**
Special services and studies	304	165	11	51	2	90	4	**627**
Education support	1	5	219	14	…	16	3	**259**
Administration of extramural programs	59	…	…	…	…	…	…	**59**
Capital expenditures	70	…	…	…	…	…	…	**70**

1. As reported by the funder, the federal government, not by the performers.
2. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): Due to rounding, components may not add to the totals.

Table 1-10
Federal expenditures — On science and technology and its components, by activity and performing sector[1], 2006/2007[p]

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other performers	Total
	millions of dollars							
Total science and technology	**5,062**	**1,042**	**2,851**	**256**	**50**	**360**	**41**	**9,662**
Total research and development	**2,298**	**737**	**2,568**	**193**	**44**	**196**	**27**	**6,062**
In-house research and development	1,737	…	…	…	…	…	…	**1,737**
Research and development contracts	27	215	42	4	1	10	10	**309**
Supporting contracts	92	…	…	…	…	…	…	**92**
Research and development grants and contributions	…	517	2,457 [2]	187	42 [3]	168	9	**3,381**
Research fellowships	12	4	70	2	…	18	8	**114**
Administration of extramural programs	280	…	…	…	…	…	…	**280**
Capital expenditures	149	…	…	…	…	…	…	**149**
Total related scientific activities	**2,764**	**306**	**283**	**63**	**6**	**164**	**14**	**3,600**
Data collection	1,637	75	8	20	4	19	6	**1,770**
Information services	664	26	18	17	0	28	2	**755**
Special services and studies	321	201	12	20	1	104	2	**662**
Education support	1	4	245	6	…	12	3	**272**
Administration of extramural programs	63	…	…	…	…	…	…	**63**
Capital expenditures	78	…	…	…	…	…	…	**78**

1. As reported by the funder, the federal government, not by the performers.
2. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $30 million for the Agriculture Development Fund project.

Note(s): Due to rounding, components may not add to the totals.

Table 1-11
Federal expenditures — On science and technology and its components, by activity and performing sector[1], 2007/2008[p]

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other performers	Total
	millions of dollars							
Total science and technology	**4,973**	**1,061**	**2,870**	**252**	**25**	**309**	**43**	**9,534**
Total research and development	**2,338**	**732**	**2,590**	**183**	**19**	**174**	**30**	**6,067**
In-house research and development	1,769	…	…	…	…	…	…	**1,769**
Research and development contracts	25	210	40	4	1	12	12	**304**
Supporting contracts	100	…	…	…	…	…	…	**100**
Research and development grants and contributions	…	517	2474 [2]	173	17	143	11	**3,334**
Research fellowships	12	5	76	6	…	19	8	**128**
Administration of extramural programs	296	…	…	…	…	…	…	**296**
Capital expenditures	136	…	…	…	…	…	…	**136**
Total related scientific activities	**2,635**	**328**	**280**	**69**	**6**	**135**	**13**	**3,467**
Data collection	1,451	91	8	19	4	23	6	**1,603**
Information services	709	24	18	16	0	32	2	**803**
Special services and studies	337	209	12	27	2	70	2	**658**
Education support	1	5	242	6	…	9	3	**266**
Administration of extramural programs	65	…	…	…	…	…	…	**65**
Capital expenditures	73	…	…	…	…	…	…	**73**

1. As reported by the funder, the federal government, not by the performers.
2. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): Due to rounding, components may not add to the totals.

Table 2-1
Federal intramural expenditures — On science and technology and its components, by activity

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**4,579**	**4,685**	**5,024**	**5,062**	**4,973**
Total research and development	**2,083**	**2,084**	**2,414**	**2,298**	**2,338**
Current expenditures	1,655	1,662	1,983	1,868	1,906
Administration of extramural programs	257	269	285	280	296
Capital expenditures	172	152	146	149	136
Total related scientific activities	**2,496**	**2,601**	**2,610**	**2,764**	**2,635**
Data collection	1,393	1,479	1,588	1,637	1,451
Information services	584	587	588	664	709
Special services and studies	311	325	304	321	337
Education support	7	7	1	1	1
Administration of extramural programs	57	58	59	63	65
Capital expenditures	145	146	70	78	73

Note(s): Due to rounding, components may not add to the totals.

Table 2-2
Federal intramural expenditures — On science and technology, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**4,579**	**4,685**	**5,024**	**5,062**	**4,973**
Agriculture and Agri-Food Canada	316	328	325	331	332
Atomic Energy of Canada Limited	168	141	172	118	161
Canadian Space Agency	105	112	145	123	187
Environment Canada	533	506	610	531	510
Fisheries and Oceans Canada	280	276	275	256	254
Health Canada	280	258	263	307	329
Industry Canada	98	110	115	117	122
National Defence	205	246	277	302	267
National Research Council Canada	643	656	696	645	612
Natural Resources Canada	456	458	457	446	482
Statistics Canada	581	609	702	842	641
Total of major departments and agencies	**3,665**	**3,700**	**4,037**	**4,018**	**3,897**
Other	914	985	987	1,044	1,076

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 2-3
Federal intramural expenditures — On research and development by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**2,083**	**2,084**	**2,414**	**2,298**	**2,338**
Agriculture and Agri-Food Canada	238	236	302	307	307
Atomic Energy of Canada Limited	168	141	172	118	161
Canadian Institutes of Health Research	45	53	53	52	52
Canadian Space Agency	95	101	133	108	172
Environment Canada	187	182	220	191	183
Fisheries and Oceans Canada	68	72	77	73	72
National Defence	167	202	257	279	238
National Research Council Canada	564	554	629	578	544
Natural Resources Canada	231	213	218	212	229
Total of major departments and agencies	**1,767**	**1,754**	**2,061**	**1,918**	**1,958**
Other	320	330	353	380	380

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures.Due to rounding, components may not add to the totals.

Table 2-4
Federal intramural expenditures — On related scientific activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total	**2,496**	**2,601**	**2,610**	**2,764**	**2,635**
Canadian Museum of Civilization	122	121	73	77	77
Environment Canada	346	324	391	340	326
Fisheries and Oceans Canada	211	204	198	183	182
Health Canada	206	207	218	248	272
Library and Archives Canada	...	80	97	92	91
National Research Council Canada	79	102	68	68	68
Natural Resources Canada	225	246	238	234	253
Parks Canada Agency	101	107	77	76	76
Statistics Canada	561	589	683	825	621
Total major departments and agencies	**1,851**	**1,980**	**2,043**	**2,143**	**1,966**
Other	645	621	567	621	669

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 2-5
Federal intramural expenditures — On science and technology for the National Capital Region

	2001/2002	2002/2003 r	2003/2004	2004/2005	2005/2006
	millions of dollars				
National Capital Region (total)					
Science and technology (total)	**2,603**	**2,608**	**2,642**	**2,709**	**2,912**
Social sciences and humanities	1,257	1,226	1,185	1,222	1,283
Natural sciences and engineering	1,345	1,382	1,457	1,486	1,628
Research and development	**925**	**1,015**	**999**	**961**	**1,123**
Social sciences and humanities	90	115	117	116	121
Natural sciences and engineering	835	900	882	845	1,002
Related scientific activities	**1,677**	**1,593**	**1,643**	**1,748**	**1,788**
Social sciences and humanities	1,167	1,110	1,068	1,106	1,162
Natural sciences and engineering	510	483	575	642	626
National Capital Region (Ontario)					
Science and technology (total)	**2,310**	**2,276**	**2,361**	**2,398**	**2,546**
Social sciences and humanities	1,102	1,029	1,044	1,060	1,129
Natural sciences and engineering	1,208	1,246	1,316	1,338	1,416
Research and development	**885**	**966**	**950**	**913**	**1,040**
Social sciences and humanities	82	105	108	107	110
Natural sciences and engineering	803	861	842	806	930
Related scientific activities	**1,425**	**1,310**	**1,411**	**1,485**	**1,506**
Social sciences and humanities	1,020	924	937	953	1,019
Natural sciences and engineering	405	385	474	532	486
National Capital Region (Quebec)					
Science and technology (total)	**292**	**332**	**281**	**310**	**366**
Social sciences and humanities	155	196	141	162	154
Natural sciences and engineering	137	136	140	148	212
Research and development	**40**	**48**	**49**	**48**	**83**
Social sciences and humanities	8	10	9	9	11
Natural sciences and engineering	32	38	39	38	72
Related scientific activities	**252**	**284**	**232**	**263**	**282**
Social sciences and humanities	147	186	131	153	143
Natural sciences and engineering	105	98	101	110	140

Note(s): Due to rounding, components may not add to the totals.

Table 3-1
Federal extramural expenditures — On science and technology and its components, by performing sector[1]

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**4,186**	**4,250**	**4,425**	**4,600**	**4,560**
Business enterprises	1,039	979	1,044	1,042	1,061
Higher education	2,255 [2]	2,396 [2]	2,698 [3]	2,851 [4]	2,870 [5]
Canadian non-profit institutions	514 [6,7]	444 [8]	307	256	252
Provincial and municipal governments	32	22	19	50 [9]	25
Foreign performers	288	358	306	360	309
Other performers	57	51	51	41	43
Total research and development	**3,379**	**3,371**	**3,628**	**3,764**	**3,729**
Business enterprises	770	704	791	737	732
Higher education	2,059 [2]	2,173 [2]	2,442 [3]	2,568 [4]	2,590 [5]
Canadian non-profit institutions	340 [6]	260	206	193	183
Provincial and municipal governments	22	15	10	44 [9]	19
Foreign performers	144	185	146	196	174
Other performers	43	33	33	27	30
Total related scientific activities	**807**	**879**	**797**	**836**	**832**
Business enterprises	269	275	253	306	328
Higher education	196	223	256	283	280
Canadian non-profit institutions	174 [7]	184 [8]	101	63	69
Provincial and municipal governments	10	7	9	6	6
Foreign performers	144	173	160	164	135
Other performers	14	18	19	14	13

1. As reported by the funder, the federal government, not by the performers.
2. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes $50M for the Canadian Foundation for Climate and Atmospheric Sciences funded by Environment Canada.
7. Includes $125M for the Sustainable Development Technology Fund funded by Environment Canada.
8. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.
9. Includes $30 million for the Agriculture Development Fund project.

Note(s): Due to rounding, components may not add to the totals.

Table 3-2

Federal extramural expenditures — On science and technology and its components in the business enterprise sector, by major departments and agencies

	2003/2004	2004/2005	2005/2006 [r]	2006/2007 [p]	2007/2008 [p]
	millions of dollars				
Total science and technology	**1,039**	**979**	**1,044**	**1,042**	**1,061**
Agriculture and Agri-Food Canada	3	7	24	19	16
Atlantic Canada Opportunities Agency	25	41	25	49	49
Canada Economic Development (Quebec Regions)	19	24	25	21	19
Canadian International Development Agency	151	137	126	181	191
Canadian Space Agency	119	118	89	134	121
Environment Canada	28	39	50	43	41
Industry Canada	323	274	411	309	293
National Defence	168	150	135	116	138
National Research Council of Canada	82	83	73	69	92
Natural Resources Canada	42	45	36	43	46
Other	79	61	50	58	55
Total research and development	**770**	**704**	**791**	**737**	**732**
Agriculture and Agri-Food Canada	…	6	22	18	14
Atlantic Canada Opportunities Agency	25	41	25	49	49
Canada Economic Development (Quebec Regions)	19	24	25	21	19
Canadian Space Agency	117	116	88	132	120
Environment Canada	14	14	18	15	15
Industry Canada	322	273	410	308	292
National Defence	98	75	76	62	67
National Research Council Canada	82	83	73	69	92
Natural Resources Canada	41	44	31	36	39
Other	52	28	23	27	25
Total related scientific activities	**269**	**275**	**253**	**306**	**328**
Canadian International Development Agency	151	136	126	181	190
Environment Canada	14	25	32	28	27
Fisheries and Oceans Canada	0	3	5	5	5
Health Canada	6	6	6	5	6
National Defence	69	75	59	55	71
Natural Resources Canada	1	2	5	6	7
Other	28	28	20	26	22

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 3-3

Federal extramural expenditures — On science and technology and its components in the higher education sector, by major departments and agencies

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**2,255**	**2,396**	**2,698**	**2,851**	**2,870**
Canada Foundation for Innovation	351	260	424	400	430
Canadian Institutes of Health Research	625	678	730	791	797
Canadian International Development Agency	61	66	68	67	67
Natural Sciences and Engineering Research Council	649	728	782	824	825
Social Sciences and Humanities Research Council of Canada	420 [1]	477 [1]	530 [2]	585 [3]	579 [4]
Other	149	187	164	184	172
Total research and development	**2,059**	**2,173**	**2,442**	**2,568**	**2,590**
Canada Foundation for Innovation	351	260	424	400	430
Canadian Institutes of Health Research	619	669	717	778	784
Natural Sciences and Engineering Research Council	569	642	687	728	725
Social Sciences and Humanities Research Council of Canada	379 [1]	419 [1]	451 [2]	495 [3]	489 [4]
Other	141	183	163	167	162
Total related scientific activities	**196**	**223**	**256**	**283**	**280**
Canadian Institutes of Health Research	6	9	12	13	14
Canadian International Development Agency	42	45	46	45	43
Natural Sciences and Engineering Research Council	80	86	94	96	100
Social Sciences and Humanities Research Council of Canada	41	58	79	91	89
Other	27	25	25	38	34

1. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
2. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 3-4

Federal extramural expenditures — On science and technology and its components in the business enterprise sector, by type of payment and by major departments and agencies

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology payments	**1,039**	**979**	**1,044**	**1,042**	**1,061**
Total research and development payments	**770**	**704**	**791**	**737**	**732**
Total contracts	**230**	**208**	**185**	**215**	**210**
Atomic Energy of Canada Limited	8	3	5	8	8
Canadian Space Agency	91	102	74	111	101
Environment Canada	14	14	16	15	15
National Defence	98	75	76	62	67
Natural Resources Canada	4	3	5	6	6
Transport Canada	4	4	4	4	4
Other	11	7	5	9	9
Total grants and contributions	**535**	**490**	**601**	**517**	**517**
Agriculture and Agri-Food Canada	…	6	22	18	14
Atlantic Canada Opportunities Agency	25	41	25	49	49
Canada Economic Development (Quebec Regions)	19	24	25	21	19
Canadian Space Agency	26	14	15	21	19
Industry Canada	322	273	410	308	292
National Research Council of Canada	80	81	72	69	92
Natural Resources Canada	37	41	26	31	33
Other	26	10	6	0	0
Total research fellowships	**5**	**6**	**5**	**4**	**5**
Total related scientific activities payments	**269**	**275**	**253**	**306**	**328**
Canadian International Development Agency	151	136	126	181	190
Environment Canada	14	25	32	28	27
Fisheries and Oceans Canada	0	3	5	5	5
Health Canada	6	6	6	5	6
National Defence	69	75	59	55	71
Natural Resources Canada	1	2	5	6	7
Other	28	28	20	26	22

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 3-5

Federal extramural expenditures — On science and technology and its components in the higher education sector, by type of payment and by major funding departments and agencies

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology payments	**2,255**	**2,396**	**2,698**	**2,851**	**2,870**
Total research and development payments	**2,059**	**2,173**	**2,442**	**2,568**	**2,590**
Total contracts	**31**	**33**	**37**	**42**	**40**
Atomic Energy of Canada Limited	0	1	3	0	0
Canadian International Development Agency	9	10	10	10	11
Canadian Space Agency	10	10	11	17	15
Environment Canada	4	3	3	3	3
National Defence	4	4	8	9	8
Other	4	5	2	3	3
Total grants and contributions	**1,970**	**2,081**	**2,337**	**2,457**	**2,474**
Canada Foundation for Innovation	351	260	424	400	430
Canadian Institutes of Health Research	578	630	672	728	734
Natural Sciences and Engineering Research Council	562	634	678	721	716
Social Sciences and Humanities Research Council of Canada	379 [1]	419 [1]	451 [2]	494 [3]	489 [4]
Other	100	138	112	114	105
Total research fellowships	**59**	**59**	**68**	**70**	**76**
Total related scientific activities payments	**196**	**223**	**256**	**283**	**280**
Total education support payments	**172**	**194**	**219**	**245**	**242**
Canadian Institutes of Health Research	6	9	12	13	13
Canadian International Development Agency	35	37	38	38	35
Natural Sciences and Engineering Research Council	80	86	94	96	100
Social Sciences and Humanities Research Council of Canada	35	52	69	80	79
Other	16	10	6	18	15
Total other related scientific activities	**24**	**29**	**37**	**37**	**38**

1. Includes $225 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
2. Includes $245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes $260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
4. Includes $300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

Note(s): The major funding departments and agencies are those who that contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 3-6

Federal extramural expenditures — On science and technology and its components in the Canadian non-profit institutions sector, by major funding departments and agencies

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**514**	**444**	**307**	**256**	**252**
Atlantic Canada Opportunities Agency	6	5	6	5	5
Canada Economic Development (Quebec Regions)	1	2	21	27	26
Canadian Institutes of Health Research	12	17	14	15	15
Canadian International Development Agency	9	9	9	9	10
Environment Canada	191 [1, 2]	109 [3]	10	9	8
Fisheries and Oceans Canada	1	6	6	6	6
Foreign Affairs and International Trade Canada	…	…	8	…	…
Genome Canada	83	81	90	85	103
Health Canada	16	9	12	10	7
Human Resources and Social Development Canada	…	11	8	3	13
Industry Canada	11	41	50	24	0
International Development Research Centre	1	…	6	…	…
Natural Resources Canada	139	113	20	22	24
Natural Sciences and Engineering Research Council	2	12	17	17	12
Other	42	29	30	24	23
Total research and development	**340**	**260**	**206**	**193**	**183**
Atlantic Canada Opportunities Agency	6	5	6	5	5
Canada Economic Development (Quebec Regions)	1	1	19	26	26
Canada Foundation for Innovation	…	2	4	…	…
Canadian Institutes of Health Research	12	17	14	15	15
Genome Canada	83	81	90	85	103
Human Resources and Social Development Canada	…	11	7	0	1
International Development Research Centre	0	…	5	…	…
Industry Canada	11	11	20	24	…
Natural Resources Canada	137	108	11	11	12
Natural Sciences and Engineering Research Council	1	10	15	15	10
Western Economic Diversification Canada	4	5	5	5	5
Other	85 [1]	9	10	7	6
Total related scientific activities	**174**	**184**	**101**	**63**	**69**
Agriculture and Agri-Food Canada	0	1	2	2	1
Canada Economic Development (Quebec Regions)	0	1	2	1	1
Canadian Heritage	3	6	2	1	1
Canadian International Development Agency	7	7	8	7	8
Environment Canada	139 [2]	106 [3]	7	6	6
Fisheries and Oceans Canada	…	5	6	6	6
Foreign Affairs and International Trade Canada	…	…	8	…	…
Health Canada	9	9	11	10	7
International Development Research Centre	0	…	2	…	…
Industry Canada	0	30	30	0	0
Library and Archives Canada	…	3	2	2	2
Natural Resources Canada	2	4	9	11	12
Natural Sciences and Engineering Research Council	1	2	2	2	2
Social Sciences and Humanities Research Council of Canada	2	3	3	3	2
Status of Women	1	1	2	2	…
Other	10	6	5	10	21

1. Includes $50M for the Canadian Foundation for Climate and Atmospheric Sciences funded by Environment Canada
2. Includes $125M for the Sustainable Development Technology Fund funded by Environment Canada
3. Includes $100 million for the Sustainable Development Technology Fund funded by Environment Canada.

Note(s): The major funding departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 3-7
Federal extramural expenditures — On science and technology and its components in the foreign sector, by major funding departments and agencies

	2003/2004 r	2004/2005 r	2005/2006 r	2006/2007 p	2007/2008 p
	millions of dollars				
Total science and technology	**288**	**358**	**306**	**360**	**309**
Canadian Institutes of Health Research	8	8	9	10	10
Canadian International Development Agency	115	171	109	150	102
Canadian Space Agency	33	32	31	47	43
Environment Canada	6	6	7	6	6
Foreign Affairs and International Trade Canada	25	16	43	29	28
International Development Research Centre	42	61	58	69	76
National Defence	25	29	11	8	11
National Research Council of Canada	11	12	10	14	6
Natural Sciences and Engineering Research Council	12	12	14	12	14
Other	11	11	14	15	13
Total research and development	**144**	**185**	**146**	**196**	**174**
Canadian Institutes of Health Research	8	8	9	10	10
Canadian International Development Agency	32	53	25	49	30
Canadian Space Agency	33	32	31	47	42
International Development Research Centre	34	51	48	58	64
National Defence	12	14	8	5	7
National Research Council of Canada	11	12	10	14	6
Natural Sciences and Engineering Research Council	7	8	9	8	9
Other	7	7	6	5	6
Total related scientific activities	**144**	**173**	**160**	**164**	**135**
Canadian International Development Agency	83	118	84	101	72
Environment Canada	5	5	6	5	5
Foreign Affairs and International Trade Canada	25	16	43	29	28
International Development Research Centre	8	10	9	12	13
Natural Sciences and Engineering Research Council	5	5	5	5	5
Social Sciences and Humanities Research Council of Canada	2	3	4	4	4
Other	16	16	9	8	8

Note(s): The major funding departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals.

Table 4-1
Federal personnel — Engaged in science and technology activities

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology	**34,707**	**34,339**	**35,102**	**36,026**	**35,555**
Research and development	12,030	12,092	13,321	13,348	13,512
Administration of extramural research and development programs	1,554	1,627	1,924	1,927	1,978
Related scientific activities	20,534	20,073	19,341	20,218	19,505
Administration of extramural related scientific activities programs	589	547	515	534	560
Natural sciences and engineering	**23,800**	**23,949**	**24,166**	**24,385**	**25,029**
Research and development	11,537	11,590	12,792	12,816	12,980
Administration of extramural research and development programs	1,337	1,411	1,680	1,688	1,730
Related scientific activities	10,576	10,617	9,414	9,588	10,004
Administration of extramural related scientific activities programs	351	331	280	294	315
Social sciences and humanities	**10,907**	**10,390**	**10,936**	**11,640**	**10,527**
Research and development	494	502	529	532	532
Administration of extramural research and development programs	217	216	245	239	248
Related scientific activities	9,958	9,456	9,927	10,629	9,501
Administration of extramural related scientific activities programs	239	216	235	240	245

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-2
Federal personnel — Scientific and professional engaged in science and technology activities

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology	**14,823**	**14,928**	**15,936**	**15,964**	**16,328**
Research and development	5,612	5,469	6,346	6,087	6,312
Administration of extramural research and development programs	493	508	742	756	770
Related scientific activities	8,551	8,815	8,681	8,938	9,056
Administration of extramural related scientific activities programs	167	136	167	183	190
Natural sciences and engineering	**11,113**	**11,291**	**11,933**	**11,840**	**12,366**
Research and development	5,330	5,189	6,057	5,784	6,014
Administration of extramural research and development programs	408	428	656	676	686
Related scientific activities	5,286	5,595	5,133	5,288	5,574
Administration of extramural related scientific activities programs	89	80	88	92	91
Social sciences and humanities	**3,710**	**3,637**	**4,003**	**4,124**	**3,962**
Research and development	283	280	289	303	298
Administration of extramural research and development programs	85	80	87	81	84
Related scientific activities	3,264	3,220	3,548	3,650	3,482
Administration of extramural related scientific activities programs	78	56	79	91	99

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-3
Federal personnel — Technical engaged in science and technology activities

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology	**9,003**	**8,884**	**8,646**	**8,960**	**8,670**
Research and development	3,697	3,652	3,897	4,202	4,014
Administration of extramural research and development programs	72	78	68	67	68
Related scientific activities	5,205	5,141	4,661	4,669	4,564
Administration of extramural related scientific activities programs	29	13	20	21	25
Natural sciences and engineering	**6,718**	**6,612**	**6,318**	**6,651**	**6,529**
Research and development	3,624	3,566	3,806	4,117	3,924
Administration of extramural research and development programs	70	75	67	67	68
Related scientific activities	3,005	2,961	2,429	2,450	2,516
Administration of extramural related scientific activities programs	19	10	17	17	21
Social sciences and humanities	**2,284**	**2,273**	**2,327**	**2,309**	**2,141**
Research and development	73	86	91	85	89
Administration of extramural research and development programs	1	3	1	1	0
Related scientific activities	2,200	2,180	2,232	2,220	2,048
Administration of extramural related scientific activities programs	10	3	3	4	3

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-4
Federal personnel — Other personnel engaged in science and technology activities

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology	**10,882**	**10,527**	**10,520**	**11,102**	**10,558**
Research and development	2,721	2,971	3,078	3,059	3,187
Administration of extramural research and development programs	990	1,041	1,114	1,103	1,141
Related scientific activities	6,778	6,117	6,000	6,611	5,885
Administration of extramural related scientific activities programs	393	398	328	330	345
Natural sciences and engineering	**5,969**	**6,046**	**5,915**	**5,895**	**6,134**
Research and development	2,583	2,836	2,929	2,914	3,042
Administration of extramural research and development programs	859	908	958	946	976
Related scientific activities	2,285	2,061	1,853	1,851	1,914
Administration of extramural related scientific activities programs	243	241	175	185	203
Social sciences and humanities	**4,913**	**4,480**	**4,605**	**5,207**	**4,424**
Research and development	138	135	149	145	145
Administration of extramural research and development programs	131	133	157	158	165
Related scientific activities	4,494	4,056	4,146	4,760	3,971
Administration of extramural related scientific activities programs	150	157	153	145	143

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-5
Federal personnel — Engaged in science and technology activities, by category and activity

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology personnel	**34,707**	**34,339**	**35,102**	**36,026**	**35,555**
Scientific and professional	14,823	14,928	15,936	15,964	16,328
Technical	9,003	8,884	8,646	8,960	8,670
Other	10,882	10,527	10,520	11,102	10,558
Total research and development personnel	**13,585**	**13,719**	**15,245**	**15,274**	**15,490**
Scientific and professional	6,105	5,977	7,089	6,843	7,082
Technical	3,769	3,731	3,965	4,270	4,081
Other	3,711	4,012	4,192	4,162	4,328
Total related scientific activities personnel	**21,123**	**20,620**	**19,856**	**20,751**	**20,065**
Scientific and professional	8,718	8,951	8,848	9,120	9,246
Technical	5,234	5,154	4,681	4,691	4,589
Other	7,171	6,515	6,328	6,940	6,230

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.

Table 4-6
Federal personnel — Engaged in science and technology activities in the natural sciences and engineering, by category and activity

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology personnel	**23,800**	**23,949**	**24,166**	**24,385**	**25,029**
Scientific and professional	11,113	11,291	11,933	11,840	12,366
Technical	6,718	6,612	6,318	6,651	6,529
Other	5,969	6,046	5,915	5,895	6,134
Total research and development personnel	**12,874**	**13,001**	**14,472**	**14,503**	**14,710**
Scientific and professional	5,738	5,617	6,713	6,460	6,700
Technical	3,694	3,641	3,873	4,184	3,992
Other	3,442	3,743	3,887	3,860	4,018
Total related scientific activities personnel	**10,927**	**10,948**	**9,694**	**9,882**	**10,319**
Scientific and professional	5,375	5,674	5,220	5,380	5,665
Technical	3,024	2,971	2,446	2,467	2,537
Other	2,527	2,303	2,028	2,035	2,117

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.

Table 4-7
Federal personnel — Engaged in science and technology activities in the social sciences and humanities, by category and activity

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total science and technology personnel	**10,907**	**10,390**	**10,936**	**11,640**	**10,527**
Scientific and professional	3,710	3,637	4,003	4,124	3,962
Technical	2,284	2,273	2,327	2,309	2,141
Other	4,913	4,480	4,605	5,207	4,424
Total research and development personnel	**711**	**718**	**774**	**771**	**780**
Scientific and professional	367	360	376	383	381
Technical	75	89	92	86	89
Other	269	268	306	302	310
Total related scientific activities personnel	**10,196**	**9,672**	**10,162**	**10,869**	**9,746**
Scientific and professional	3,343	3,277	3,627	3,740	3,581
Technical	2,210	2,183	2,235	2,224	2,052
Other	4,644	4,212	4,300	4,905	4,114

Note(s): Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.

Table 4-8

Federal personnel — Engaged in science and technology activities, by type of science, activity, category and by provinces and territories, 2005/2006

	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	National Capital Region	Canada
	millions of dollars												
Total Sciences													
Scientific and professional personnel													
Science and technology	208	55	618	238	1,588	1,803	454	300	619	797	174	9,082	**15,936**
Research and development	96	39	280	139	1,128	1,340	262	234	407	394	36	2,734	**7,089**
Related scientific activities	112	16	338	99	460	463	192	66	212	403	138	6,348	**8,847**
Total Personnel													
Science and technology	428	113	1,333	407	3,716	4,079	1,113	743	1,381	1,673	335	19,780	**35,102**
Research and development	196	79	604	228	2,399	2,784	604	526	871	773	62	6,119	**15,245**
Related scientific activities	232	34	729	179	1,317	1,295	509	217	510	900	273	13,661	**19,856**
Natural Sciences													
Scientific and professional personnel													
Science and technology	191	51	587	232	1,526	1,753	432	299	594	768	168	5,332	**11,933**
Research and development	96	39	280	139	1,125	1,329	261	234	407	394	36	2,373	**6,713**
Related scientific activities	95	12	307	93	401	424	171	65	187	374	132	2,959	**5,220**
Total Personnel													
Science and technology	385	103	1,138	392	3,306	3,768	999	703	1,265	1,556	305	10,246	**24,166**
Research and development	196	80	604	228	2,393	2,765	603	526	872	773	62	5,370	**14,472**
Related scientific activities	189	23	534	164	913	1,003	396	177	393	783	243	4,876	**9,694**
Social Sciences													
Scientific and professional personnel													
Science and technology	18	4	30	6	63	50	21	2	25	29	6	3,749	**4,003**
Research and development	0	0	0	0	3	12	0	0	0	0	0	361	**376**
Related scientific activities	18	4	30	6	60	38	21	2	25	29	6	3,388	**3,627**
Total Personnel													
Science and technology	43	11	195	15	410	311	113	40	116	117	30	9,534	**10,936**
Research and development	0	0	0	0	6	18	0	0	0	0	0	749	**773**
Related scientific activities	43	11	195	15	404	293	113	40	116	117	30	8,785	**10,162**

Note(s): Due to rounding, components may not add to the totals. Quebec and Ontario figures exclude federal government expenditures performed in the National Capital Region.

Table 4-9

Federal personnel — Engaged in science and technology activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 [r]	2006/2007 [p]	2007/2008 [p]
	number				
Total	**34,707**	**34,339**	**35,102**	**36,026**	**35,555**
Agriculture and Agri-Food Canada	2,375	2,309	2,238	2,297	2,304
Atomic Energy of Canada Limited	1,002	1,250	1,450	1,362	1,570
Canadian Space Agency	550	573	596	618	709
Environment Canada	3,263	3,238	3,469	3,576	3,576
Fisheries and Oceans Canada	1,903	1,857	1,790	1,800	1,794
Health Canada	2,742	2,472	2,567	2,770	2,959
Industry Canada	913	972	983	962	1,083
National Defence	1,960	2,089	1,819	1,907	1,823
National Research Council Canada	4,139	4,178	4,155	4,033	4,044
Natural Resources Canada	3,604	3,223	3,273	3,184	3,177
Statistics Canada	5,648	5,436	5,737	6,315	5,177
Total majordepartments and agencies	**28,099**	**27,597**	**28,077**	**28,824**	**28,216**
Other	6,608	6,742	7,025	7,202	7,339

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-10
Federal personnel — Scientific and professional engaged in science and technology activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total	**14,823**	**14,928**	**15,936**	**15,964**	**16,328**
Agriculture and Agri-Food Canada	792	794	1,027	768	773
Atomic Energy of Canada Limited	573	492	642	603	695
Canadian Space Agency	246	256	268	277	318
Environment Canada	1,595	1,584	1,695	1,747	1,747
Fisheries and Oceans Canada	910	890	852	861	865
Health Canada	1,694	1,716	1,828	1,973	2,139
Industry Canada	642	702	676	678	754
National Defence	966	1,060	958	988	1,101
National Research Council Canada	1,502	1,519	1,647	1,602	1,606
Natural Resources Canada	1,977	1,889	1,950	1,922	1,922
Statistics Canada	1,429	1,389	1,375	1,387	1,222
Total major departments and agencies	**12,326**	**12,291**	**12,918**	**12,806**	**13,142**
Other	2,497	2,637	3,018	3,158	3,186

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-11
Federal personnel — Technical engaged in science and technology activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total	**9,003**	**8,884**	**8,646**	**8,960**	**8,670**
Agriculture and Agri-Food Canada	910	885	649	970	970
Atomic Energy of Canada Limited	314	322	372	349	403
Canadian Space Agency	36	39	40	42	48
Environment Canada	974	966	1,036	1,068	1,068
Fisheries and Oceans Canada	798	779	759	760	753
Health Canada	548	319	303	325	325
Industry Canada	62	70	62	51	52
National Defence	558	589	475	503	281
National Research Council Canada	1,189	1,208	1,108	1,116	1,118
Natural Resources Canada	1,004	956	988	948	947
Statistics Canada	1,468	1,413	1,469	1,433	1,262
Total major departments and agencies	**7,861**	**7,546**	**7,261**	**7,565**	**7,227**
Other	1,142	1,338	1,385	1,395	1,443

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-12

Federal personnel — Other personnel engaged in science and technology activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total	**10,882**	**10,527**	**10,520**	**11,102**	**10,558**
Agriculture and Agri-Food Canada	673	630	563	559	561
Atomic Energy of Canada Limited	115	436	436	410	472
Canadian Space Agency	268	278	288	299	343
Environment Canada	694	688	738	761	761
Fisheries and Oceans Canada	194	189	179	179	175
Health Canada	500	437	435	473	494
Industry Canada	209	200	245	233	277
National Defence	437	440	386	415	441
National Research Council Canada	1,448	1,451	1,400	1,315	1,320
Natural Resources Canada	623	378	335	314	308
Statistics Canada	2,751	2,633	2,893	3,495	2,693
Total major departments and agencies	**7,912**	**7,760**	**7,898**	**8,453**	**7,845**
Other	2,970	2,767	2,622	2,649	2,713

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-13

Federal personnel — Engaged in research and development activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total	**13,585**	**13,719**	**15,245**	**15,274**	**15,490**
Agriculture and Agri-Food Canada	1,737	1,647	2,081	2,142	2,142
Atomic Energy of Canada Limited	1,002	1,250	1,450	1,362	1,570
Canadian Institutes of Health Research	269	278	318	356	399
Canadian Space Agency	482	498	524	544	624
Environment Canada	914	906	970	1,000	1,000
Fisheries and Oceans Canada	521	510	496	497	493
National Defence	1,477	1,563	1,538	1,585	1,416
National Research Council Canada	2,965	3,000	3,654	3,593	3,593
Natural Resources Canada	1,923	1,656	1,685	1,640	1,634
Total major departments and agencies	**11,290**	**11,308**	**12,716**	**12,719**	**12,871**
Other	2,295	2,411	2,529	2,555	2,619

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-14
Federal personnel — Engaged in related scientific activities, by major departments and agencies

	2003/2004	2004/2005	2005/2006 r	2006/2007 p	2007/2008 p
	number				
Total	**21,123**	**20,620**	**19,856**	**20,751**	**20,065**
Canadian Museum of Civilization	373	403	395	427	420
Environment Canada	2,349	2,332	2,499	2,576	2,576
Fisheries and Oceans Canada	1,381	1,348	1,294	1,303	1,301
Health Canada	2,124	2,074	2,149	2,348	2,518
Library and Archives Canada	..	816	798	729	729
National Research Council Canada	1,174	1,178	501	440	451
Natural Resources Canada	1,681	1,567	1,588	1,544	1,543
Parks Canada Agency	916	674	697	697	697
Statistics Canada	5,447	5,255	5,555	6,123	4,985
Total major departments and agencies	**15,445**	**15,647**	**15,476**	**16,187**	**15,220**
Other	5,678	4,973	4,380	4,564	4,845

Note(s): The major departments and agencies are those who contributed 2% or more to the total 2005/2006 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 5-1
Federal expenditures by provinces and territories — On science and technology

	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006
	millions of dollars				
Canada	**7,476**	**7,300**	**7,976**	**8,156**	**8,682**
Newfoundland and Labrador	95	117	121	137	128
Prince Edward Island	26	24	33	39	47
Nova Scotia	225	247	257	294	261
New Brunswick	82	102	100	122	93
Quebec [1]	1,381	1,243	1,328	1,352	1,485
Ontario [1]	1,653	1,582	2,038	1,967	2,101
Manitoba	211	214	194	226	254
Saskatchewan	165	151	159	157	193
Alberta	476	395	469	474	484
British Columbia	525	582	588	645	673
Yukon Territory, Northwest Territories and Nunavut	34	35	46	35	51
Canada (excluding National Capital Region (NCR)	**4,873**	**4,692**	**5,333**	**5,448**	**5,770**
National Capital Region [2]	2,603	2,608	2,642	2,708	2,912

1. Includes the extramural expenditures of the National Capital Region.
2. Federal intramural expenditures only.

Note(s): Due to rounding, components may not add to the totals.

Table 5-2

Federal expenditures by provinces and territories — On science and technology, by type of science and performing sector, 2005/2006

	Federal government	Business enterprises	Higher education	Other [1] performers	Total
	millions of dollars				
Total sciences - Canada	**5,024**	**851**	**2,500**	**307**	**8,682**
Newfoundland and Labrador	62	18	39	9	**128**
Prince Edward Island	31	4	12	1	**47**
Nova Scotia	157	24	71	9	**261**
New Brunswick	46	12	30	5	**93**
Quebec [2]	535	239	660	50	**1,485**
Ontario [2]	563	402	997	139	**2,101**
Manitoba	155	19	69	11	**254**
Saskatchewan	97	9	62	25	**193**
Alberta	198	29	236	21	**484**
British Columbia	220	93	326	35	**673**
Yukon Territory, Northwest Territories and Nunavut	48	1	0 s	1	**51**
Canada (excluding National Capital Region)	**2,112**	**851**	**2,500**	**307**	**5,770**
National Capital Region [3]	2,912	…	…	…	**2,912**
Natural sciences - Canada	**3,618**	**840**	**1,958**	**258**	**6,674**
Newfoundland and Labrador	59	18	31	8	**116**
Prince Edward Island	30	4	10	1	**45**
Nova Scotia	140	24	51	9	**223**
New Brunswick	45	12	20	4	**80**
Quebec [2]	508	238	511	42	**1,299**
Ontario [2]	528	396	790	113	**1,826**
Manitoba	144	19	54	5	**221**
Saskatchewan	94	9	48	24	**175**
Alberta	186	29	187	20	**422**
British Columbia	212	91	257	32	**592**
Yukon Territory, Northwest Territories and Nunavut	44	1	0 s	1	**46**
Canada (excluding National Capital Region)	**1,989**	**840**	**1,958**	**258**	**5,046**
National Capital Region [3]	1,628	…	…	…	**1,628**
Social sciences - Canada	**1,406**	**11**	**542**	**49**	**2,008**
Newfoundland and Labrador	3	0 s	8	1	**12**
Prince Edward Island	1	0	1	0 s	**2**
Nova Scotia	17	0 s	19	1	**37**
New Brunswick	1	1	9	1	**12**
Quebec [2]	27	2	150	8	**186**
Ontario [2]	36	6	207	26	**276**
Manitoba	11	1	15	6	**33**
Saskatchewan	4	0 s	14	1	**18**
Alberta	12	0 s	49	2	**62**
British Columbia	8	1	69	3	**82**
Yukon Territory, Northwest Territories and Nunavut	4	0 s	0 s	0 s	**4**
Canada (excluding National Capital Region)	**123**	**11**	**542**	**49**	**725**
National Capital Region [3]	1,283	…	…	…	**1,283**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other performers.
2. Includes extramural expenditures in the National Capital Region performed within the province.
3. Federal intramural expenditures only.

Note(s): Due to rounding, components may not add to the totals.

Table 5-3

Federal expenditures by provinces and territories — On research and development, by type of science and performing sector, 2005/2006

	Federal government	Business enterprises	Higher education	Other [1] performers	Total
	millions of dollars				
Total sciences - Canada	**2,414**	**754**	**2,304**	**197**	**5,669**
Newfoundland and Labrador	28	18	37	6	**88**
Prince Edward Island	28	4	11	0 [s]	**43**
Nova Scotia	66	21	63	7	**157**
New Brunswick	26	11	26	3	**66**
Quebec [2]	368	203	614	43	**1,228**
Ontario [2]	395	368	917	69	**1,748**
Manitoba	83	15	64	4	**165**
Saskatchewan	68	9	58	22	**157**
Alberta	130	22	215	14	**381**
British Columbia	91	84	298	30	**503**
Yukon Territory, Northwest Territories and Nunavut	9	0 [s]	0 [s]	1	**11**
Canada (excluding National Capital Region)	**1,290**	**754**	**2,304**	**197**	**4,545**
National Capital Region [3]	1,123	…	…	…	**1,123**
Natural sciences - Canada	**2,289**	**753**	**1,847**	**175**	**5,064**
Newfoundland and Labrador	28	18	30	5	**81**
Prince Edward Island	28	4	10	0 [s]	**41**
Nova Scotia	66	21	47	7	**141**
New Brunswick	26	11	18	3	**58**
Quebec [2]	367	203	486	39	**1,095**
Ontario [2]	392	366	747	55	**1,560**
Manitoba	83	15	51	3	**152**
Saskatchewan	68	9	46	21	**144**
Alberta	130	22	173	13	**338**
British Columbia	91	84	240	28	**442**
Yukon Territory, Northwest Territories and Nunavut	9	0 [s]	0 [s]	1	**10**
Canada (excluding National Capital Region)	**1,287**	**753**	**1,847**	**175**	**4,061**
National Capital Region [3]	1,002	…	…	…	**1,002**
Social sciences - Canada	**125**	**2**	**457**	**22**	**605**
Newfoundland and Labrador	0	0	7	0 [s]	**7**
Prince Edward Island	0	0	1	0	**1**
Nova Scotia	0	0 [s]	16	0 [s]	**17**
New Brunswick	0	0	8	0 [s]	**8**
Quebec [2]	1	0 [s]	128	4	**133**
Ontario [2]	3	1	170	14	**188**
Manitoba	0	0	13	0 [s]	**13**
Saskatchewan	0	0	12	1	**13**
Alberta	0	0 [s]	42	1	**43**
British Columbia	0	0 [s]	58	2	**61**
Yukon Territory, Northwest Territories and Nunavut	0	0 [s]	0 [s]	0 [s]	**0** [s]
Canada (excluding National Capital Region)	3	2	457	22	**484**
National Capital Region [3]	121	…	…	…	**121**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other performers.
2. Includes extramural expenditures in the National Capital Region performed within the province.
3. Federal intramural expenditures only.

Note(s): Due to rounding, components may not add to the totals.

Table 5-4

Federal expenditures by provinces and territories — On related scientific activities, by type of science and performing sector, 2005/2006

	Federal government	Business enterprises	Higher education	Other [1] performers	Total
	millions of dollars				
Total sciences - Canada	**2,610**	**96**	**197**	**110**	**3,013**
Newfoundland and Labrador	34	0 [s]	2	3	**40**
Prince Edward Island	4	0 [s]	0 [s]	0 [s]	**4**
Nova Scotia	92	3	8	2	**104**
New Brunswick	20	1	4	2	**27**
Quebec [2]	168	36	46	7	**257**
Ontario [2]	168	35	80	71	**354**
Manitoba	72	4	5	8	**88**
Saskatchewan	29	0 [s]	4	3	**37**
Alberta	68	7	20	8	**104**
British Columbia	129	9	28	6	**171**
Yukon Territory, Northwest Territories and Nunavut	38	1	0 [s]	1	**40**
Canada (excluding National Capital Region)	**822**	**96**	**197**	**110**	**1,225**
National Capital Region [3]	1,788	…	…	…	**1,788**
Natural sciences - Canada	**1,329**	**87**	**111**	**84**	**1,610**
Newfoundland and Labrador	31	0 [s]	1	3	**35**
Prince Edward Island	2	0 [s]	0 [s]	0 [s]	**3**
Nova Scotia	74	3	5	1	**83**
New Brunswick	19	0 [s]	2	1	**23**
Quebec [2]	141	35	25	3	**204**
Ontario [2]	135	30	43	58	**266**
Manitoba	61	4	2	2	**69**
Saskatchewan	26	0 [s]	2	3	**31**
Alberta	57	7	14	7	**84**
British Columbia	121	8	17	5	**150**
Yukon Territory, Northwest Territories and Nunavut	35	1	0 [s]	1	**36**
Canada (excluding National Capital Region)	**702**	**87**	**111**	**84**	**984**
National Capital Region [3]	626	…	…	…	**626**
Social sciences - Canada	**1,282**	**9**	**85**	**26**	**1,402**
Newfoundland and Labrador	3	0 [s]	1	0 [s]	**5**
Prince Edward Island	1	0	0 [s]	0 [s]	**1**
Nova Scotia	17	0 [s]	3	0 [s]	**21**
New Brunswick	1	1	1	1	**4**
Quebec [2]	27	1	21	4	**53**
Ontario [2]	33	5	38	12	**88**
Manitoba	11	1	2	6	**20**
Saskatchewan	4	0 [s]	1	0 [s]	**5**
Alberta	12	0 [s]	7	1	**19**
British Columbia	8	1	11	1	**21**
Yukon Territory, Northwest Territories and Nunavut	4	0 [s]	0	0 [s]	**4**
Canada (excluding National Capital Region)	**120**	**9**	**85**	**26**	**241**
National Capital Region [3]	1,162	…	…	…	**1,162**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other performers.
2. Includes extramural expenditures in the National Capital Region performed within the province.
3. Federal intramural expenditures only.

Note(s): Due to rounding, components may not add to the totals.

Table 5-5
Federal expenditures by provinces and territories — Extramural expenditures on science and technology, by type of science and activity, 2005/2006

	N.L.	P.E.I.	N.S.	N.B.	Que.[1]	Ont.[1]	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Canada
	millions of dollars											
Total Sciences												
Total science and technology	**66**	**16**	**103**	**47**	**949**	**1,538**	**99**	**96**	**286**	**454**	**3**	**3,658**
Grants	56	15	92	41	748	1,320	92	89	263	397	2	**3,114**
Contracts	10	1	11	6	202	219	7	6	24	57	1	**544**
Total research and development	**60**	**15**	**91**	**40**	**860**	**1,353**	**82**	**88**	**251**	**412**	**1**	**3,255**
Grants	53	15	85	37	696	1,172	80	82	235	364	1	**2,820**
Contracts	8	0[s]	7	3	164	181	3	6	16	48	0[s]	**436**
Total related scientific activities	**6**	**1**	**12**	**7**	**89**	**185**	**17**	**7**	**35**	**42**	**2**	**403**
Grants	3	0[s]	7	4	52	148	12	7	28	33	1	**294**
Contracts	3	1	5	3	37	38	5	0[s]	8	9	1	**108**
Natural sciences												
Total science and technology	**57**	**15**	**83**	**36**	**791**	**1,298**	**77**	**81**	**236**	**380**	**3**	**3,057**
Grants	47	14	72	31	591	1,089	71	75	213	324	2	**2,529**
Contracts	10	1	11	5	200	209	6	6	23	56	1	**528**
Total research and development	**53**	**14**	**75**	**32**	**728**	**1,168**	**69**	**75**	**208**	**351**	**1**	**2,774**
Grants	46	14	68	29	564	988	67	70	192	303	1	**2,341**
Contracts	8	0[s]	7	3	164	180	3	6	16	48	0[s]	**434**
Total related scientific activities	**4**	**1**	**9**	**4**	**63**	**130**	**8**	**6**	**27**	**29**	**2**	**282**
Grants	1	0[s]	4	2	27	101	4	5	21	21	1	**188**
Contracts	3	1	4	2	36	29	4	0[s]	7	8	1	**94**
Social Sciences												
Total science and technology	**9**	**1**	**20**	**11**	**159**	**240**	**22**	**15**	**51**	**74**	**1**	**601**
Grants	9	1	20	10	157	230	21	15	50	73	1	**585**
Contracts	0[s]	0[s]	0[s]	1	2	10	1	0[s]	1	1	0[s]	**17**
Total research and development	**7**	**1**	**17**	**8**	**132**	**185**	**13**	**13**	**43**	**61**	**0**[s]	**481**
Grants	7	1	17	8	132	184	13	13	43	61	0[s]	**479**
Contracts	0[s]	0	0[s]	0[s]	0[s]	1	0	0	0[s]	0[s]	0[s]	**2**
Total related scientific activities	**2**	**0**[s]	**3**	**3**	**27**	**55**	**9**	**2**	**8**	**13**	**0**[s]	**121**
Grants	2	0[s]	3	1	25	46	8	2	7	12	0[s]	**106**
Contracts	0[s]	0[s]	0[s]	1	2	9	1	0[s]	1	1	0[s]	**15**

1. Includes extramural expenditures in the National Capital Region performed within the province.
Note(s): Due to rounding, components may not add to the totals.

Table 5-6

Federal expenditures by provinces and territories — Extramural expenditures in business enterprise on science and technology, by type of science and activity, 2005/2006

	N.L.	P.E.I.	N.S.	N.B.	Que. [1]	Ont. [1]	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Canada
	millions of dollars											
Total Sciences												
Total science and technology	**18**	**4**	**24**	**12**	**239**	**402**	**19**	**9**	**29**	**93**	**1**	**851**
Grants	11	4	15	9	45	204	13	4	11	42	1	**356**
Contracts	7	0 s	9	4	194	198	6	5	19	51	1	**494**
Total research and development	**18**	**4**	**21**	**11**	**203**	**368**	**15**	**9**	**22**	**84**	**0** s	**754**
Grants	11	4	14	9	42	200	12	4	10	38	0 s	**344**
Contracts	7	0 s	7	2	161	168	2	5	13	46	0 s	**410**
Total related scientific activities	**0** s	**0** s	**3**	**1**	**36**	**35**	**4**	**0** s	**7**	**9**	**1**	**96**
Grants	0 s	0 s	0 s	0	2	4	0 s	0 s	1	3	0 s	**12**
Contracts	0 s	0 s	3	1	34	30	4	0 s	6	5	1	**84**
Natural sciences												
Total science and technology	**18**	**4**	**24**	**12**	**238**	**396**	**19**	**9**	**29**	**91**	**1**	**840**
Grants	11	4	15	9	44	203	13	4	11	41	1	**354**
Contracts	7	0 s	9	3	193	193	6	5	18	50	1	**486**
Total research and development	**18**	**4**	**21**	**11**	**203**	**366**	**15**	**9**	**22**	**84**	**0** s	**753**
Grants	11	4	14	9	42	200	12	4	10	38	0 s	**344**
Contracts	7	0 s	7	2	161	167	2	5	12	45	0	**409**
Total related scientific activities	**0** s	**0** s	**3**	**0** s	**35**	**30**	**4**	**0** s	**7**	**8**	**1**	**87**
Grants	0	0 s	0 s	0	2	3	0 s	0 s	1	3	0 s	**10**
Contracts	0 s	0 s	3	0 s	33	26	3	0 s	6	5	1	**77**
Social Sciences												
Total science and technology	**0** s	**0**	**0** s	**1**	**2**	**6**	**1**	**0** s	**0** s	**1**	**0** s	**11**
Grants	0 s	0	0 s	0 s	0 s	1	0 s	0 s	0 s	1	0 s	**3**
Contracts	0	0	0 s	1	1	5	1	0 s	0 s	1	0 s	**8**
Total research and development	**0**	**0**	**0** s	**0**	**0** s	**1**	**0**	**0**	**0** s	**0** s	**0** s	**2**
Grants	0	0	0	0	0 s	0 s	0	0	0	0 s	0 s	**1**
Contracts	0	0	0 s	0 s	0 s	1	0	0 s	0 s	0 s	0	**1**
Total related scientific activities	**0** s	**0**	**0** s	**1**	**1**	**5**	**1**	**0** s	**0** s	**1**	**0** s	**9**
Grants	0	0	0 s	0 s	0 s	1	0 s	0 s	0 s	1	0	**2**
Contracts	0 s	0	0 s	1	1	4	1	0 s	0 s	1	0 s	**7**

1. Includes extramural expenditures in the National Capital Region performed within the province.
Note(s): Due to rounding, components may not add to the totals.

Table 5-7

Federal expenditures by provinces and territories — Extramural expenditures in higher education sector on science and technology, by type of science and activity, 2005/2006

	N.L.	P.E.I.	N.S.	N.B.	Que.[1]	Ont.[1]	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Canada
	millions of dollars											
Total sciences												
Total science and technology	**39**	**12**	**71**	**30**	**660**	**997**	**69**	**62**	**236**	**326**	**0** s	**2,500**
Grants	39	11	69	28	656	981	68	61	232	323	0 s	**2,469**
Contracts	1	0 s	1	1	4	16	0 s	1	4	3	0	**32**
Total research and development	**37**	**11**	**63**	**26**	**614**	**917**	**64**	**58**	**215**	**298**	**0** s	**2,304**
Grants	36	11	63	25	611	904	64	57	213	296	0 s	**2,280**
Contracts	1	0 s	0 s	1	3	13	0 s	1	3	3	0	**23**
Total related scientific activities	**2**	**0** s	**8**	**4**	**46**	**80**	**5**	**4**	**20**	**28**	**0** s	**197**
Grants	2	0 s	7	3	45	77	4	4	19	27	0 s	**189**
Contracts	0 s	0 s	1	1	1	3	0 s	0 s	1	0 s	0	**8**
Natural sciences												
Total science and technology	**31**	**10**	**51**	**20**	**511**	**790**	**54**	**48**	**187**	**257**	**0** s	**1,958**
Grants	31	10	50	19	507	776	53	47	184	254	0 s	**1,931**
Contracts	1	0 s	1	1	4	14	0 s	1	3	3	0	**27**
Total research and development	**30**	**10**	**47**	**18**	**486**	**747**	**51**	**46**	**173**	**240**	**0** s	**1,847**
Grants	30	10	47	17	483	734	51	45	170	237	0 s	**1,824**
Contracts	0 s	0 s	0 s	1	3	13	0 s	1	3	3	0	**23**
Total related scientific activities	**1**	**0** s	**5**	**2**	**25**	**43**	**2**	**2**	**14**	**17**	**0** s	**111**
Grants	1	0 s	4	2	24	42	2	2	13	16	0 s	**107**
Contracts	0	0 s	1	0 s	1	1	0 s	0 s	0 s	0 s	0	**4**
Social sciences												
Total science and technology	**8**	**1**	**19**	**9**	**150**	**207**	**15**	**14**	**49**	**69**	**0** s	**542**
Grants	8	1	19	9	149	205	15	14	49	69	0 s	**538**
Contracts	0 s	0	0 s	0 s	1	3	0 s	0 s	0 s	0 s	0	**4**
Total research and development	**7**	**1**	**16**	**8**	**128**	**170**	**13**	**12**	**42**	**58**	**0** s	**457**
Grants	7	1	16	8	128	170	13	12	42	58	0 s	**456**
Contracts	0 s	0	0	0	0 s	0 s	0	0	0	0 s	0	0 s
Total related scientific activities	**1**	**0** s	**3**	**1**	**21**	**38**	**2**	**1**	**7**	**11**	**0**	**85**
Grants	1	0 s	3	1	21	35	2	1	6	11	0	**81**
Contracts	0 s	0	0 s	0 s	1	2	0 s	0 s	0 s	0 s	0	**4**

1. Includes extramural expenditures in the National Capital Region performed within the province.

Note(s): Due to rounding, components may not add to the totals.

Table 5-8

Federal expenditures by provinces and territories — Extramural expenditures in other Canadian sector[1] on science and technology, by type of science and activity, 2005/2006

	N.L.	P.E.I.	N.S.	N.B.	Que.[2]	Ont.[2]	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Canada
	millions of dollars											
Total sciences												
Total science and technology	**9**	**1**	**9**	**5**	**50**	**139**	**11**	**25**	**21**	**35**	**1**	**307**
Grants	6	1	8	3	47	135	11	25	20	32	1	**289**
Contracts	2	0 s	1	2	3	5	0 s	0	1	3	0 s	**18**
Total research and development	**6**	**0** s	**7**	**3**	**43**	**69**	**4**	**22**	**13**	**30**	**1**	**197**
Grants	6	0 s	7	3	42	68	3	22	13	30	1	**195**
Contracts	0	0	0	0	0 s	1	0	0	1	0	0	**2**
Total related scientific activities	**3**	**0** s	**2**	**2**	**7**	**71**	**8**	**3**	**8**	**6**	**1**	**110**
Grants	1	0	1	0 s	5	67	7	3	7	2	0 s	**94**
Contracts	2	0 s	1	1	3	4	0 s	0	1	3	0 s	**16**
Natural sciences												
Total science and technology	**8**	**1**	**9**	**4**	**42**	**113**	**5**	**24**	**20**	**32**	**1**	**258**
Grants	6	1	7	3	40	110	5	24	19	29	1	**244**
Contracts	2	0	1	1	3	3	0	0	1	3	0 s	**15**
Total research and development	**5**	**0** s	**7**	**3**	**39**	**55**	**3**	**21**	**13**	**28**	**1**	**175**
Grants	5	0 s	7	3	39	54	3	21	12	28	0 s	**173**
Contracts	0	0	0	0	0 s	0 s	0	0	1	0	0	**2**
Total related scientific activities	**3**	**0** s	**1**	**1**	**3**	**58**	**2**	**3**	**7**	**5**	**1**	**84**
Grants	0 s	0	0 s	0 s	1	56	1	3	7	2	0 s	**71**
Contracts	2	0	1	1	2	2	0	0	0 s	3	0 s	**13**
Social sciences												
Total science and technology	**1**	**0**	**1**	**1**	**7**	**26**	**6**	**1**	**1**	**3**	**0** s	**48**
Grants	1	0	1	0 s	7	24	6	1	1	3	0 s	**45**
Contracts	0	0	0	1	0 s	2	0	0	0	0	0	**4**
Total research and development	**0** s	**0**	**0**	**0**	**4**	**14**	**0**	**1**	**1**	**2**	**0**	**22**
Grants	0	0	0	0	4	14	0	1	1	2	0	**22**
Contracts	0	0	0	0	0	0	0	0	0	0	0	**0**
Total related scientific activities	**0** s	**0**	**0** s	**1**	**4**	**12**	**6**	**0**	**1**	**1**	**0**	**26**
Grants	0 s	0	0 s	0	4	10	6	0	1	1	0	**23**
Contracts	0	0	0	1	0 s	2	0	0	0	0	0	**3**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other.
2. Includes extramural expenditures in the National Capital Region performed within the province.

Note(s): Due to rounding, components may not add to the totals.

Table 6-1
Federal expenditures by socio-economic objectives — On science and technology

	2003/2004		2004/2005 r		2005/2006 r	
	Intramural [1]	Extramural	Intramural [1]	Extramural	Intramural [1]	Extramural
	millions of dollars					
Total science and technology expenditures	**4,275**	**4,186**	**4,398**	**4,250**	**4,690**	**4,425**
Exploration and exploitation of the Earth	382	123	414	98	448	101
Infrastructure and general planning of land use						
Transport	112	33	96	34	94	32
Telecommunication	40	29	58	31	57	32
Other	162	35	145	32	130	33
Control and care of the environment	393	313	396	281	470	247
Protection and improvement of human health	362	1,006	407	1,051	435	1,175
Production, distribution and rational utilization of energy	249	215	231	186	263	121
Agricultural production and technology						
Agriculture	396	97	405	89	413	114
Fishing	172	26	168	36	168	37
Forestry	92	63	92	58	95	56
Industrial production and technology	270	810	272	797	296	958
Social structures and relationships	999	262	1,005	291	1,021	336
Exploration and exploitation of space	135	202	141	194	176	168
Non-oriented research	275	406	283	458	317	799
Other civil research	17	1	19	2	26	5
Defence	193	198	233	184	265	156
Other	26	368	32	429	17	56

1. Non-program (indirect costs) are excluded.
Note(s): Due to rounding, components may not add to the totals.

Table 6-2
Federal expenditures by socio-economic objectives — On research and development

	2003/2004		2004/2005 r		2005/2006 r	
	Intramural [1]	Extramural	Intramural [1]	Extramural	Intramural [1]	Extramural
	millions of dollars					
Total research and development expenditures	**1,976**	**3,379**	**1,983**	**3,371**	**2,298**	**3,628**
Exploration and exploitation of the earth	85	75	98	55	110	78
Infrastructure and general planning of land use						
Transport	56	19	53	27	58	28
Telecommunication	35	27	43	30	52	31
Other	38	31	38	28	46	28
Control and care of the environment	178	171	181	155	216	185
Protection and improvement of human health	196	960	203	988	210	1,106
Production, distribution and rational utilization of energy	245	210	199	181	229	103
Agricultural production and technology						
Agriculture	275	86	269	79	336	102
Fishing	42	23	44	26	47	25
Forestry	72	56	71	49	75	44
Industrial production and technology	189	778	174	732	198	884
Social structures and relationships	60	170	62	189	59	203
Exploration and exploitation of space	121	197	125	190	162	164
Non-oriented research	206	376	208	428	219	496
Other civil research	14	1	15	2	23	4
Defence	157	116	191	94	245	93
Other	6	82	10	119	13	54

1. Non-program (indirect costs) are excluded.
Note(s): Due to rounding, components may not add to the totals.

Table 6-3
Federal expenditures by socio-economic objectives — On related scientific activities

	2003/2004		2004/2005 r		2005/2006 r	
	Intramural [1]	Extramural	Intramural [1]	Extramural	Intramural [1]	Extramural
	millions of dollars					
Total related scientific activities expenditures	**2,300**	**807**	**2,415**	**879**	**2,392**	**797**
Exploration and exploitation of the earth	297	48	317	43	338	23
Infrastructure and general planning of land use						
Transport	56	14	44	7	35	4
Telecommunication	5	1	15	1	5	1
Other	123	4	107	4	84	5
Control and care of the environment	215	141	214	126	254	62
Protection and improvement of human health	167	47	205	63	225	69
Production, distribution and rational utilization of energy	3	5	32	6	34	17
Agricultural production and technology						
Agriculture	121	11	136	10	77	12
Fishing	130	2	124	10	122	12
Forestry	20	6	21	9	20	11
Industrial production and technology	81	32	98	65	98	74
Social structures and relationships	939	92	943	101	962	133
Exploration and exploitation of space	14	5	16	4	14	4
Non-oriented research	69	30	75	30	98	303
Other civil research	3	0	3	0	3	1
Defence	36	82	42	90	20	64
Other	20	286	22	310	4	2

1. Non-program (indirect costs) are excluded.
Note(s): Due to rounding, components may not add to the totals.

Methodology

The federal government is a principal funder of science and technology in Canada. This report presents information on the disposition of monies and human resources for science and technology (S&T) by federal departments and agencies. The information has been assembled to serve as a reference document for program managers, government officials, the media and the general public. It records the allocation of S&T resources for the last five years.

The statistics are collected through the survey of Federal Science Expenditures and Personnel, which records past, current and proposed expenditures for activities in the natural and social sciences. The survey is designed to correspond as much as possible to the system of budgetary estimates used by the federal government. This is done to ease response burden, assist in editing and, most importantly, to produce comparable data for policy planning and program evaluation. The questionnaire covers the same time span as the Main Estimates including: actual expenditures for the past fiscal year, e.g., 2005/2006; forecast expenditures for the current fiscal year, e.g., 2006/2007; and proposed estimates for the fiscal year, e.g., 2007/2008 (as also reported in the Public Accounts).

Over 55 different federal government departments and agencies either perform science and technology (S&T) activities or have a budgetary allocation to fund S&T. In addition to the expenditures attributable to program budgets, there are additional costs attributable to scientific activities which must be included if a full picture of the resources devoted to science activities is to be obtained. These include other sources of funds and other S&T costs which are defined below:

Transfers into the program from other federal government departments and agencies, net of transfers out;

Income from external sources such as industry and provincial governments;

Other S&T costs: Non-Program Costs (indirect costs) are costs that are not part of the budgets of scientific programs and include services provided by other departments, such as:

- accommodation by Public Works and Government Services Canada and own department;
- employer's share of health and employment insurance premiums paid by Treasury Board;
- employee compensation under Workers Compensation Acts paid by Human Resources and Social Development Canada;
- cost of legal services provided by the Department of Justice;
- cheques issue cost by Public Works and Government Services Canada.

Indirect costs are included in departmental totals; however, these costs have not been included in expenditures classified by socio-economic objective.

According to international convention, science and technology activities are divided into two fields; natural sciences and engineering (NSE) and social sciences and humanities (SSH). These fields of science are further divided into research and development (R&D) and related scientific activities (RSA). The federal government may choose to perform S&T in its own laboratories and research centres (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this publication on S&T activities funded by the federal government for R&D and RSA and distinguished by performer (that is, intramurally by the government itself or extramurally, by business enterprises (industry), universities, provincial and municipal governments, Canadian non-profit organizations, other performers and foreign performers). Definitions of these terms are provided in the

Technical Notes section. Crown corporations which have an industrial function are not included. They are treated as commercial enterprises and the crown corporation expenditures in aggregate are included in the Statistics Canada report, **Industrial Research and Development**, Catalogue No. *88-202-X*

Considerable effort has been expended to maintain the continuity and compatibility of the data series to permit analysis and study of the impact of scientific activities. Efforts of the departments and agencies in ensuring accurate and complete information are gratefully acknowledged.

Technical notes

Scope and limitations of the data

The expenditures data for scientific activities controlled by federal departments and agencies provided in this document correspond to the budgetary expenditures by program presented in the Main Estimates for the approval of Parliament. The following kinds of non-budgetary costs or expenditures are not included:

- loans or advances to and investments in crown corporations; loans or advances for specific purposes to other governments and international organizations or persons or corporations in the private sector.

Reliability of the data

All the possible sources of error were examined. Definitions have been taken from a compendium of methods of error evaluation in censuses and surveys, Statistics Canada, catalogue no. 13-564E.

- A complete enumeration is carried out of all federal departments and agencies involved in scientific activities.
- Being a census, coverage and non-response are very minor causes of error.
- No imputation, coding, or sampling is done by Statistics Canada for this exercise.

Data capture

The data capture operation in a census or survey consists of converting the data received on questionnaires (e.g., respondent answers) or coding forms to a machine readable format.

All data capture for science statistics is through manual intervention, at a computer terminal.

Significant uncorrected data capture errors are unlikely because of the examination of numerous tables and listings prepared for data analysis before publication tables are created. Mistakes in expenditures due to coding error are believed to be less than 1%.

Edit

The edit procedures usually consist of:

- checking each field of every record to ascertain whether it contains a valid code or entry;
- checking codes or entries in certain predetermined combinations of fields to ascertain whether codes or entries are consistent with one another. Although there are a number of edits, all cases of failed edit checks are corrected after consideration by editors.

Definitions

Scope and limitations of the data

According to international convention, science and technology activities are divided into two fields; natural sciences and engineering (NSE) and social sciences and humanities (SSH). These fields of science are further divided into research and development (R&D) and related scientific activities (RSA). The federal government may choose to perform S&T in its own laboratories and research centres (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this publication on S&T activities funded by the federal government for R&D and RSA and distinguished by performer (that is, intramurally by the government itself or extramurally, by business enterprises (industry), the higher education sector, provincial and municipal governments, Canadian non-profit organizations, other performers and foreign performers).

Definitions applicable to both Natural sciences and engineering and Social science and humanities

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. New knowledge involves the integration of newly acquired information into existing hypotheses, the formulation and testing of new hypotheses or the re-evaluation of existing observations.

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

Intramural includes costs incurred for scientific activities carried out by in-house personnel of units assigned to the program, the related acquisition of land, buildings, machinery and equipment for scientific activities, the administration of scientific activities by program employees and the purchase of goods and services to support in-house scientific activities.

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. Support services (i.e., administration, finance) provided by the reporting program, proportional to S&T expenditures should be included.

Extramural performance

The management and conduct of an S&T activity is entrusted to a non-federal organization. The six extramural performance sectors used in surveying S&T expenditures by the federal government are:

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, or 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 that 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.

Type of payment

Contracts

These are payments to organizations or individuals outside the federal government for the conduct of S&T by the recipient or to provide support for the federal government's in-house S&T programs.

Grants and contributions

Awards to organizations or individuals for the conduct of S&T and intended to benefit the recipients rather than provide the program with goods, services or information.

Research fellowships

Awards to individuals for advanced research training and experience. Awards intended primarily to support the education of the recipients are reported as education support.

Socio-economic objectives

Socio-economic objectives allow departments to classify their S&T resource allocations according to the purpose for which the expenditure is intended. The objectives are listed on the questionnaire at the highest level of aggregation with sub-levels given for clarification of categories. In many cases, projects have multiple objectives and a department should assign its expenditures consistent with the stated objectives of the department. Care must be taken to avoid "double counting".

The objectives are based on the Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets (NABS) produced by the Statistical Office of the European Communities (Eurostat).

- **Exploration and exploitation of the Earth**
  Scientific activities with objectives related to the exploration of the Earth's crust and mantle, seas, oceans and atmosphere, and scientific activities on their exploitation. It also includes climatic and meteorological research, polar exploration and hydrology.

- **Infrastructure and general planning of land use**
  Scientific activities on infrastructure and land development, including research on the construction of buildings. More generally, it covers all scientific activities relating to the general planning of land-use. This includes scientific activities into protection against harmful effects in town and country planning but not scientific activities into other types of pollution.

- **Control and care of the environment**
  Covers scientific activities into the control of pollution, aimed at the identification and analysis of the sources of pollution and their causes, and all pollutants, including their dispersal in the environment and the effects on man, species (fauna, flora, microorganisms) and biosphere. Development of monitoring facilities for the measurement of all kinds of pollution is included. The same is valid for the elimination and prevention of all forms of pollution in all types of environment.

- **Protection and improvement of human health**
  Scientific activities aimed at protecting, promoting and restoring human health broadly interpreted to include health aspects of nutrition and food hygiene. It ranges from preventative medicine, including all aspects of medical and surgical treatment, both for individuals and groups, and the provision of hospital and home care, to social medicine and pediatric and geriatric research.

- **Production, distribution and rational utilization of energy**
  Covers scientific activities into the production, storage, transportation, distribution and rational use of all forms of energy. It also includes scientific activities on processes designed to increase the efficiency of energy production and distribution, and the study of energy conservation.

- **Agricultural production and technology**
  Covers all scientific activities on the promotion of agriculture, forestry, fisheries and foodstuff production. It includes: scientific research on chemical fertilizers, biocides, biological pest control and the mechanization of agriculture; research on the impact of scientific activities in the field of developing food productivity and technology.

- **Industrial production and technology**
  Covers scientific activities on the improvement of industrial production and technology. It includes scientific activities on industrial products and their manufacturing processes except where they form an integral part of the pursuit of other objectives (e.g., defence, space, energy, agriculture).

- **Social structures and relationships**
  Scientific activities on social objectives, as analysed in particular by social and human sciences, which have no obvious connection with other objectives. This analysis includes quantitative, qualitative, organizational and forecasting aspects of social problems.

- **Exploration and exploitation of space**
  All civil space scientific activities. Corresponding scientific activities in the defence field is classified in the Defence objective. Although civil space research is not, in general, concerned with particular objectives, it frequently has a specific goal, such as the increase of general knowledge (e.g., astronomy), or relates to particular applications (e.g., telecommunications satellites).

- **Non-oriented research**
  Basic activities motivated by scientific curiosity with the objective of increasing scientific knowledge. It also includes funding used to support postgraduate studies and fellowships.

- **Other civil research**
  Civil scientific activities which cannot (yet) be classified to a particular objective.

- **Defence**
  Covers scientific activities for military purposes. It also includes basic research and nuclear and space research financed by ministries of defence. Civil scientific activities financed by ministries of defence, for example, in the fields of meteorology, telecommunications and health, should be classified in the relevant objectives.

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, 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.

Administration of extramural programs (AEP)

AEP identifies the FTEs engaged in the administration of contracts and grants and contributions for scientific activities that are to be performed outside the federal government. These FTEs are broken down by the type of scientific activity supported, i.e., R&D or RSA.

Definitions specific to natural sciences and engineering

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

Related scientific activities (RSA)

The kinds of related scientific activities for the natural sciences are described below.

Scientific data collection

The gathering, processing, collating and analyzing of data on natural phenomena. These data are normally the results of surveys, routine laboratory analyses or compilations of operating records.

Data collected as part of an existing or proposed R&D project are charged to research. Similarly, the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also to be considered to be a research activity. Examples of scientific data collection are: routine geological, hydrographic, oceanographic and topographic surveys; routine astronomical observations; maintenance of meteorological records; and wildlife and fisheries surveys.

Information services

All work directed to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries, S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

Sub category under 'Information services'

- **Museum services**
  The collecting, cataloguing, and displaying of specimens of the natural world or of representations of natural phenomena. The activity involves a systematic attempt to preserve and display items from the natural world; in some ways it could be considered an extension of information services. The scientific activities of natural history museums, zoological and botanical gardens, aquaria, planetaria and nature reserves are included. Parks which are not primarily restricted reserves for certain fauna or flora are excluded. In all cases the costs of providing entertainment and recreation to visitors should be excluded (e.g., restaurants, children's gardens and museums).

  When a museum also covers not only natural history but also aspects of human cultural activities, the museum's resources should be appropriated between the natural and social sciences. However, museums of science and technology, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.

Special services and studies

Work directed towards the establishment of national and provincial standards for materials, devices, products and processes; the calibration of secondary standards; non-routine quality testing; feasibility studies and demonstration projects.

Sub categories under 'Special services and studies' include:

- **Testing and standardization**
  Work directed towards the establishment of national and international standards for materials, devices, products and processes, the calibration of secondary standards and non-routine quality testing. The development of new measures for standards, or of new methods of measuring or testing, is R&D and should be reported as such. Exclude routine testing such as monitoring radioactivity levels or soil tests before construction.

- **Feasibility studies**
  Technical investigations of proposed engineering projects to provide additional information required to reach decisions on implementation. Besides feasibility studies, the related activity of demonstration projects are to be included. Demonstration projects involve the operation of scaled-up versions of a facility or process, or data on factors such as costs, operational characteristics, market demand and public acceptance. Projects called 'demonstration projects' but which conform to the definition of R&D should be considered R&D. Once a facility or process is operated primarily to provide a service or to gain revenue, rather than as a demonstration, it should no longer be included with feasibility studies. In all demonstration projects, only the net costs should be considered.

Education support

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the natural sciences. General operating or capital grants are excluded. The activity includes the support of foreign students in their studies of the natural sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships.

Definitions specific to 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.

Related scientific activities (RSA)

The kinds of related scientific activities for the social sciences and humanities are described below.

General purpose data collection

The routine gathering, processing, collating, analysis and publication of information on human phenomena using surveys, regular and special investigations and compilations of existing records. It excludes data collected primarily for internal administrative purposes (e.g., departmental personnel statistics) as well as the collection of data as part of an R&D project.

Data collected as part of an existing or proposed research project are charged to research. Similarly the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also considered a research activity. The institutions involved are generally the statistical bureaus of Canadian governments and the statistical sections of departments and agencies. If there are units whose principal activity is R&D, their costs and personnel should be assigned to R&D; specialized libraries with separate budgets should be assigned to information services.

Information services

All work related to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries, S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

Sub category under 'Information services' include:

- **Museum services**
  The collecting, cataloguing, and displaying of specimens and representations relating to human history, social organization and creations. The activity involves a systematic attempt to preserve and display the works of human beings and to provide information on their works, history, and nature. The scientific activities of historical museums, archaeological displays, and art galleries are included. In all cases, the costs of providing entertainment and recreation to visitors should be excluded (e.g., restaurants, children's gardens and museums).

  When a museum also covers aspects of natural history, the museum's operation should be divided between the social and natural sciences. However, museums of science and technology, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.

Special services and studies

Systematic investigations carried out in order to provide information needed for planning or policy formulation. Demonstration projects are also included.

The work is usually carried out by specialized units in some government departments, by consultants, by royal commissions, and by task forces. The activity is similar to R&D since it may require innovative analyses and a high degree of scientific ability. However, such studies are not intended to acquire new knowledge but to provide specific answers to specific problems (generally immediate, localized and perhaps temporary). The day-to-day

operations of units concerned with departmental planning, organization or management are not normally included (i.e., administrative records kept by departments of education) but special projects may be relevant.

Sub categories under 'Special services and studies' include:

- **Economic and feasibility studies**
  Investigations of the socio-economic characteristics and implications of specific situations. Such studies are generally limited to a specific problem and involve the application of established social science techniques and methodologies.

- **Operations and policy studies**
  The analysis and assessment of departmental programs, policies and operations, the activities of units concerned with the continuing analysis and monitoring of external phenomena (e.g., foreign economic statistics, defence and security information) as well as studies to provide an information base for policy development. The work is carried out by specialized units in some government departments, by consultants, by royal commissions and by task forces.

Education support

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the social sciences. General purpose grants to educational institutions are excluded. The activity includes the support of foreign students in their studies of the social sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships.