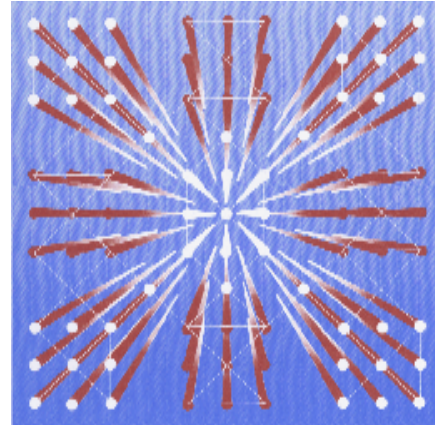




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Federal Scientific Activities

2004-2005



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- ... not applicable
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- 0^s 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

Note

Due to rounding, components may not add to the totals.



Statistics Canada
Science and Innovation Surveys Section
Science, Innovation and Electronic Information Division

Federal Scientific Activities

2004-2005

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Foreword

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 ten years.

The statistics are collected through the survey of S&T activities of federal departments and agencies, 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 the response burden, assist in editing and, most importantly, to produce comparable data for policy planning and program evaluation. Thus, the questionnaire covers the same time span as the Estimates including: proposed estimates for the fiscal year, e.g. 2004/05; forecast expenditures for the current fiscal year, e.g. 2003/04, and actual expenditures for the past fiscal year, e.g. 2002/03 (as also reported in the Public Accounts).

Over 65 different Federal Government departments and agencies either perform 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 Development Canada;
 - cost of legal services provided by the Department of Justice;
 - cheques issue cost by Public Works and Government Services Canada;
 - overhead - portion of a central administration program costs attributable to scientific activities.

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 (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this report 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, private non-profit organizations, other Canadian 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-XIE.

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.

This publication was prepared by **Jason Leonard**, Senior Statistical Officer, with the assistance of the staff of Science and Innovation Surveys Section, Science, Innovation and Electronic Information Division and under the direction of **Lloyd Lizotte**, Subject Matter Manager. Ginette McConnell provided key assistance in the production of this document.

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Highlights

- The federal government's budgetary Science & Technology (S&T) spending intentions for 2004/05 are \$9.2 billion, an increase of 7% over that forecasted for 2003/04. The preliminary expenditures for 2003/04 were \$8.6 billion.
- The federal government's spending on S&T including research and development (R&D) has climbed from 3.5% of the total federal budget in 1995/96 to 4.9% in 2004/05.
- The total \$9.2 billion in federal S&T expenditures does not include federal R&D tax credits
- The central activity of S&T is scientific research and experimental development (R&D). In 2004/05, the federal government was expected to spend \$5.8 billion on R&D, an increase of 6% from 2003/04. This includes both intramural performance (activities carried out primarily by the federal government) and extramural funding (activities managed and performed by non-federal organizations) of R&D.
- The federal government departments with the largest estimated expenditures on S&T activities in 2004/05 are: the Natural Sciences and Engineering Research Council, the National Research Council, Environment Canada, and the Canadian Institutes of Health Research, which together account for 33% of the government's total expenditures.
- In 2004/05, 53% (\$4.9 billion) of the total S&T expenditures will be spent on activities performed by the federal government itself. Of total planned R&D spending, the federal government will perform 39% (\$2.2 billion).
- Activities in the natural sciences and engineering (NSE) will receive the bulk of federal government funding (76% in 2004/05), most of which (74%) is for research and development (R&D).
- Most of the monies (70%) for the social sciences and humanities (SSH) will be spent on related scientific activities (RSA) such as data collection, information services and special services and studies. Statistics Canada is the government's major spender of social science funds, with \$615 million in 2004/05.
- In 2004/05, 34,960 person-years were involved in federal S&T activities, a 1.3% increase from 2003/04. Fifty-eight percent, or 20,136 person-years, were engaged in RSA activities.
- The government also funds science activities performed in other sectors: business enterprise, higher education, provincial governments, private non-profit organizations, and other Canadian and foreign organizations. Of these extramural sectors, the business enterprise sector received 11% and the higher education sectors received 28% of total federal S&T expenditures in 2004/05.
- R&D planned payments in 2004/05 to business enterprises amounted to \$726 million.
- Higher education received funding of \$2,310 million for R&D and \$225 million for RSA in 2004/05. The three granting councils, the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council, as well as the Canada Foundation for Innovation are the major Federal Government funders of R&D performed in Canadian universities.

1. Expenditure overview

1. Expenditure Overview

The overview section provides an aggregate of government expenditures by various categories including field of science (NSE and SSH) and activity (R&D and RSA). The performers of S&T are also identified for the period 1995/96 to 2004/05.

Table 1.1 Federal budgetary main estimates and expenditures on R&D and S&T in current dollars and in constant 1997 dollars, 1995 to 2004									
Year	Current dollars					Constant 1997 dollars			
	Budgetary main estimates ¹	S&T	%	R&D	%	GDP implicit price index ²	Budgetary main estimates ¹	S&T	R&D
	in millions of dollars						in millions of dollars		
1995	164,191	5,693	3.5	3,465	2.1	97.2	168,921	5,857	3,565
1996	156,985	5,694	3.6	3,391	2.2	98.8	158,892	5,763	3,432
1997	149,555	5,509	3.7	3,379	2.3	100.0	149,555	5,509	3,379
1998	145,457	5,802	4.0	3,578	2.5	99.6	146,041	5,825	3,592
1999	151,559	6,252	4.1	3,890	2.6	101.3	149,614	6,172	3,840
2000	156,157	6,707	4.3	4,150	2.7	105.5	148,016	6,357	3,934
2001 ^f	165,234	8,169	4.9	4,989	3.0	106.7	154,858	7,656	4,676
2002 ^f	170,367	8,014	4.7	4,927	2.9	107.8	158,040	7,434	4,571
2003 ^f	175,937	8,988	5.1	5,689	3.2	111.4	157,933	8,068	5,107
2004 ^p	186,055	9,183	4.9	5,798	3.1	114.7	162,210	8,006	5,055

1. Part 1, Government Expenditures Plan, Estimates.

2. CANSIM, table 380-0056.

The standard measure or indicator of a country's R&D effort is the summary statistic, "Gross Domestic Expenditures on R&D or GERD". Frequently this is expressed as a percent of Gross Domestic Product (GDP). The Federal Government values that are part of GERD are its R&D activities performed intramurally and can be found in table 1.11. For further discussion and explanation of GERD, please refer to volume 28 no. 12 of Statistics Canada Catalogue no. 88-001-XIE.

Table 1.2 Gross domestic expenditures on R&D (GERD) by performing and funding sector, 2004							
Funding sector	Performing sector						Total
	Federal government	Provincial government	Provincial research organizations	Business enterprises	Higher education	Private non-profit	
	in millions of dollars						
Federal government	2,168	2	1	274	2,279	11	4,735
Provincial government	11	273	15	53	1,040	17	1,409
Provincial research organizations	0	0	0	0	0	0	0
Business enterprises	55	29	9	10,403	807	11	11,314
Higher education	0	0	0	0	4,309	0	4,309
Private non-profit	0	0	0	0	758	29	787
Foreign	0	0	1	1,804	126	2	1,933
Total	2,234	304	26	12,534	9,319	70	24,487

Chart 1.1 Federal expenditures on R&D and S&T as a percentage of federal budgetary main estimates, 1995 to 2004

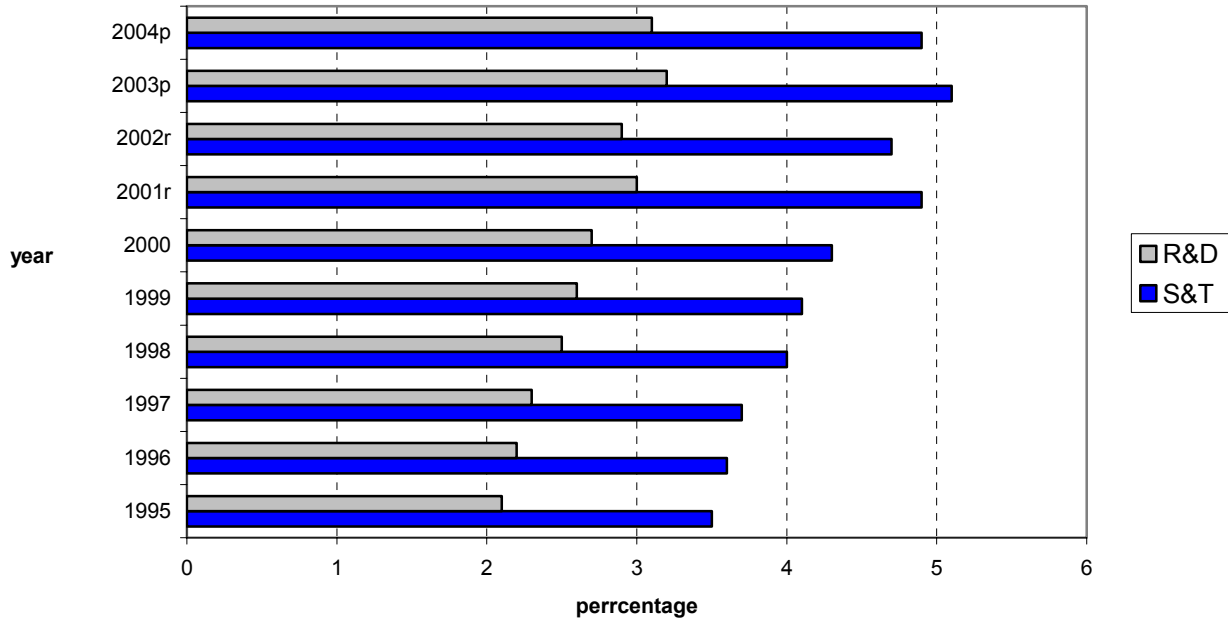


Chart 1.2 Federal expenditures on science and technology, by major department or agency, 2002/03, 2003/04 and 2004/05

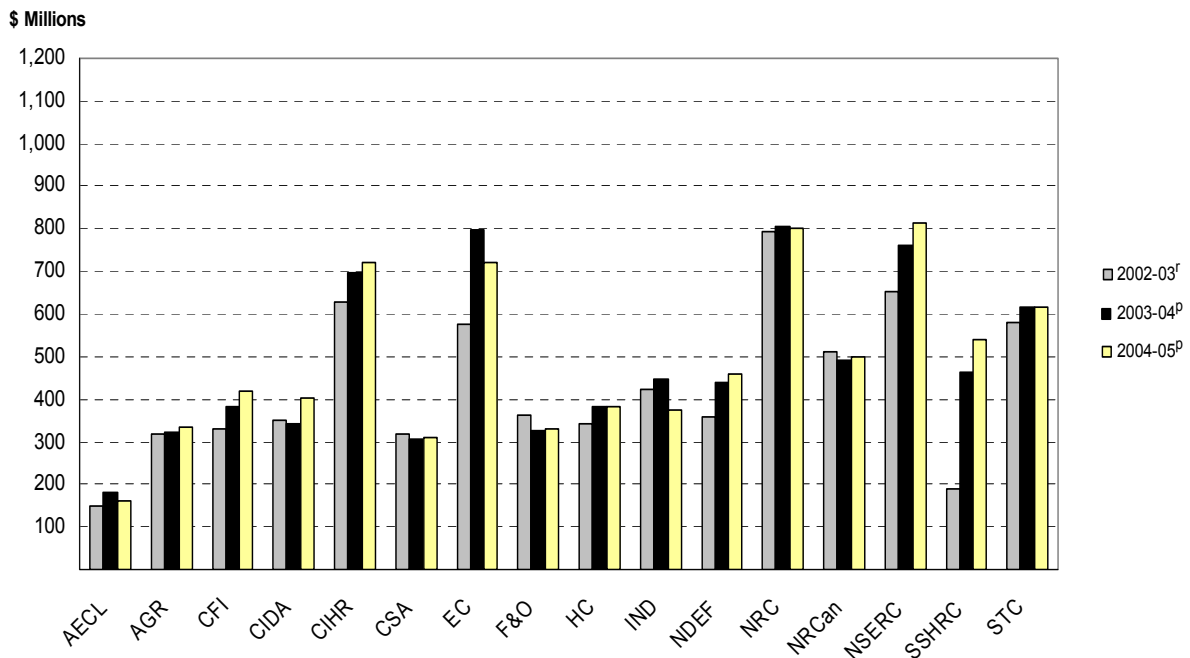


Chart 1.3 Federal expenditures on science and technology, by major department or agency, 2004/05

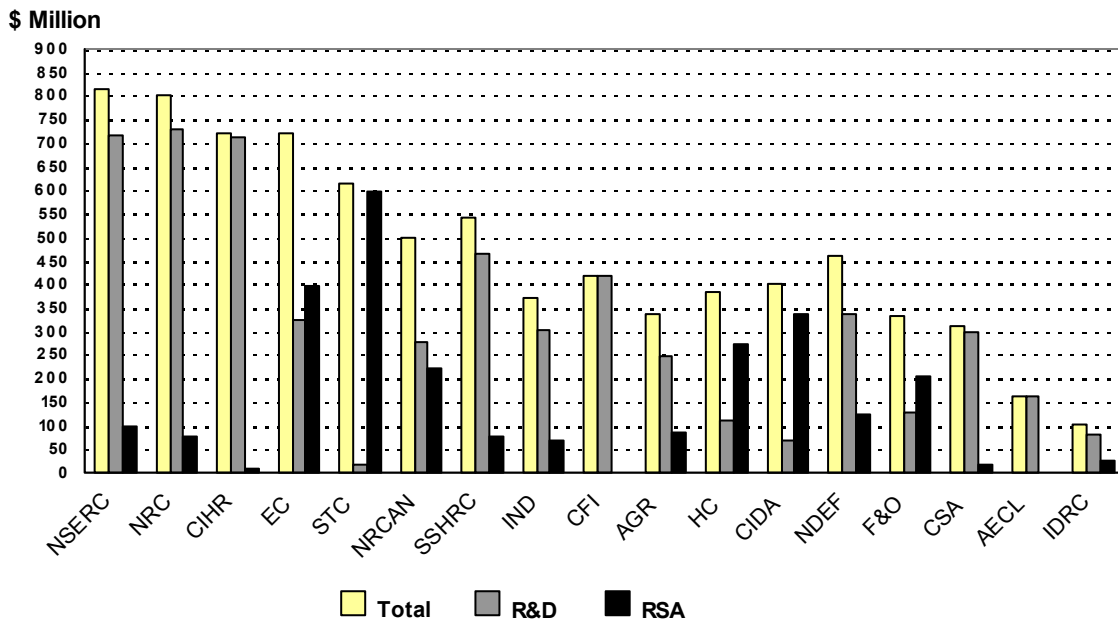


Chart 1.4 Distribution of federal expenditures on science and technology, by sector, 2004/05

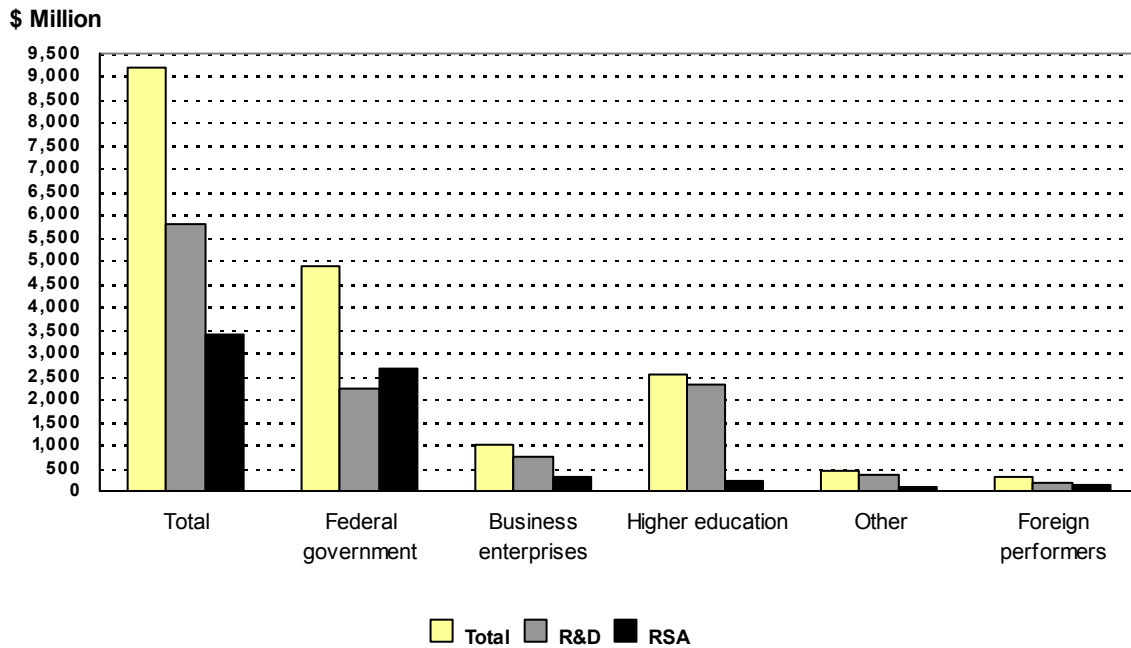


Chart 1.5 Science and technology expenditures by field of science, natural sciences and engineering, 1995 to 2004

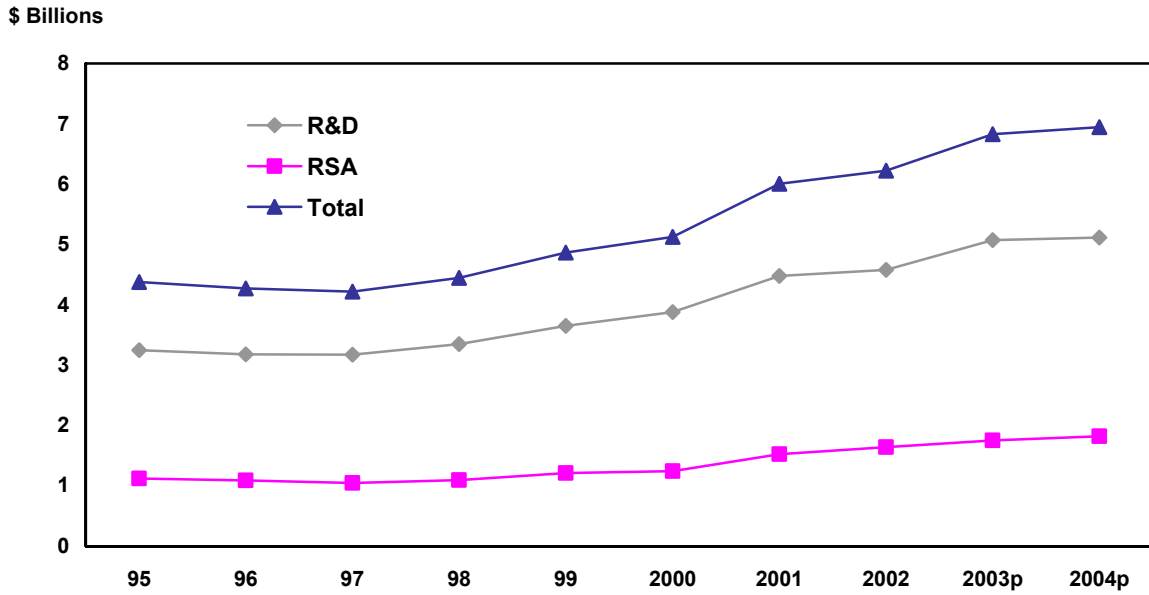


Chart 1.6 Science and technology expenditures by field of science, social sciences and humanities, 1995 to 2004

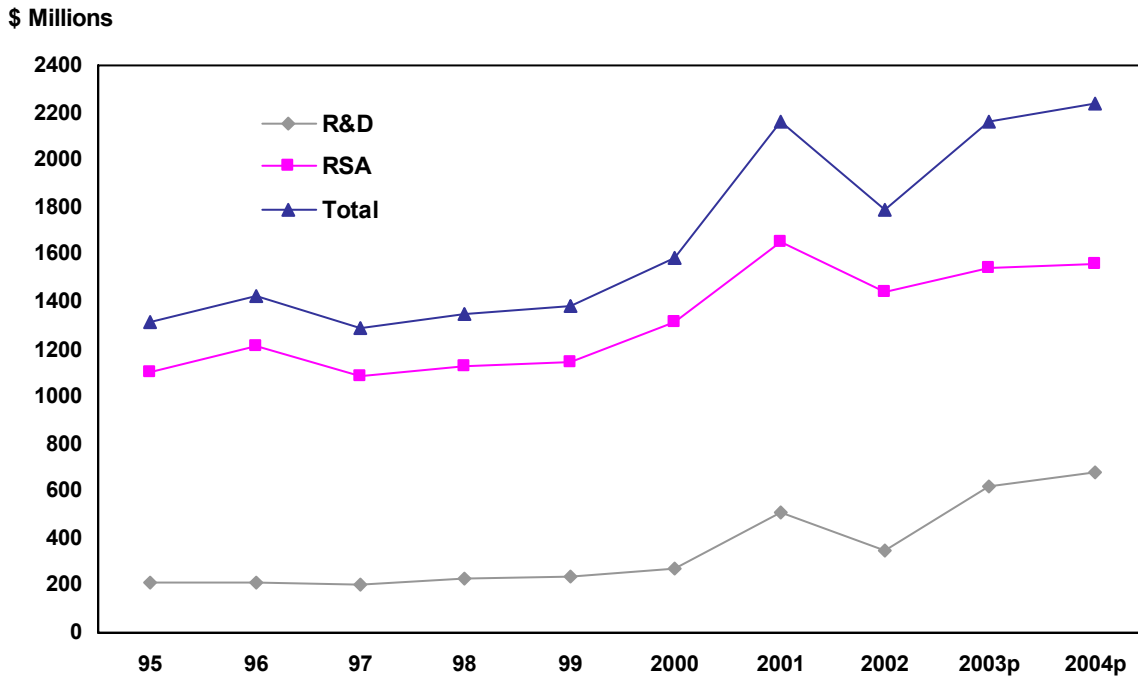


Table 1.3 Major federal S&T performers, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
Major S&T performers	5,401	5,397	5,231	5,492	5,928	6,379	7,817	7,510	8,516	8,653
AECL	168	240	174	135	132	136	178	147	180	162
AGR	358	368	359	351	387	363	337	320	323	335
BC	35	39	41	45	41	42	48	67	71	78
CFI	...	...	2	31	118	188	239	332	383	419
CH ¹	82	82	78	1	1	1	11	11	15	15
CIDA	334	339	303	314	335	358	387	352	341	403
CIHR	...	...	...	...	317	392	529	628	698	719
CMC	53	56	55	54	55	58	64	83	124	143
CSA	299	253	230	343	305	310	330	320	307	312
EC ¹	529	456	453	427	538	479	626	574	799	721
FA&IT	58	59	58	49	54	45	48	...	...	...
FAC	...	...	...	...	...	...	...	48	47	46
F&O	244	246	204	281	287	367	319	363	327	331
GC	...	...	...	...	...	...	34	62	81	84
HC	201	214	210	204	236	229	311	342	382	384
HRDC	60	60	65	74	60	69	64	66	61	...
HRSD	...	...	...	...	...	...	...	...	...	31
IDRC	88	88	78	85	82	84	76	86	92	104
IND	324	291	407	343	301	336	687	424	445	373
MRC	252	242	238	277	...	...	...	...	...	...
NA	65	46	36	35	35	41	59	56	56	50
NDEF	233	253	311	304	335	315	315	358	439	460
NL	49	43	42	40	42	48	53	60	59	53
NRC	481	479	524	554	597	655	719	793	804	803
NRCan	475	430	396	386	421	437	554	511	493	500
NSERC	471	453	436	499	549	568	588	653	762	814
PCA	...	...	...	82	68	90	95	100	103	103
SDC	...	...	...	...	...	...	...	...	...	30
SSHRC	101	93	96	104	127	145	362	188	463	541
STC	406	535*	400	437	461	576	727*	579	616	615
TB	35	32	35	37	44	47	57	47	45	24
Minor S&T performers	292	297	278	310	324	328	352	504	472	530
Total	5,693	5,694	5,509	5,802	6,252	6,707	8,169	8,014	8,988	9,183

See footnotes at end of section.

Table 1.4 Federal expenditures on R&D, by major department or agency, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
AECL	163	240	174	135	132	136	178	147	180	162
AGR	328	350	340	335	370	354	329	267	236	249
CED (Qué)	24	28	22	23	12	10	17	25	27	24
CFI	...	...	2	31	118	188	239	332	383	419
CIDA	51	52	48	49	50	57	56	53	44	68
CIHR	...	...	...	...	304	384	522	622	690	712
CSA	291	245	224	337	300	298	317	309	293	297
EC ¹	163	135	127	116	196	144	222	207	401	324
F&O	99	95	78	109	110	130	123	141	126	128
HC	63	74	65	54	55	65	102	105	124	113
IDRC	78	76	64	67	71	76	65	67	71	80
IND	268	230	345	274	239	288	503	371	383	304
MRC	244	234	229	266	...	...	...	...	...	...
NDEF	229	223	264	263	293	274	281	261	315	337
NRC	419	429	470	499	530	591	645	718	729	728
NRCan	403	372	350	345	376	388	335	285	274	278
NSERC	425	410	393	443	481	500	517	573	673	716
SSHRC	70	64	65	68	92	105	325	148	408	464
STC	10	9	11	12	13	13	16	19	17	17
Other	137	125	108	152	148	149	197	277	315	378
Total	3,465	3,391	3,379	3,578	3,890	4,150	4,989	4,927	5,689	5,798

See footnotes at end of section.

Table 1.5 Federal expenditures on S&T, by major department or agency and source of funds, 2004/05							
Department or agency	Total estimated expenditures on sciences	Sources of Funds					
		External sources	Other S&T Costs		Budgetary sources		
			Indirect non-program costs	Administrative costs of department	Other federal agencies ⁶	Own department	
in millions of dollars							
AGR	335	0	16	0	-10	329	
CSA	312	0	4	0	-15	323	
EC	721	73	37	43	36	532	
F&O	331	7	19	0	5	300	
HC	384	10	25	56	3	290	
IND	373	0	15	0	-20	378	
NDEF	460	0	11	0	-6	455	
NRC	803	19	19	0	40	725	
NRCan	500	0	30	0	0	470	
STC	615	57	50	0	73	435	

See footnotes at end of section.

Table 1.6 Federal S&T expenditures, by department or agency and performing sector², 2004/05

Department or agency	Sector of performance					Total
	Intramural	Business enterprises	Higher education	Other	Foreign performers	
	in millions of dollars					
AECL	150	7	0	0	5	162
AGR	314	3	1	17	0	335
BC	78	0	0	0	0	78
CFI	10	0	409	0	0	419
CIDA	19	182	82	22	98	403
CIHR	43	0	648	18	10	719
CSA	164	107	10	0	31	312
EC	550	41	10	114	6	721
F&O	315	5	3	8	0	331
FAC	6	0	12	0	28	46
GC	3	0	0	81	0	84
HC	332	14	8	30	0	384
IDRC	46	0	6	3	49	104
IND	126	236	0	11	0	373
NDEF	198	190	8	5	59	460
NL	53	0	0	0	0	53
NRC	669	86	40	2	6	803
NRCan	442	29	5	22	2	500
NSERC	40	8	736	18	12	814
PCA	101	1	1	0	0	103
SSHRC	25	0	499	14	3	541
STC	614	0	0	1	0	615
Other	578	112	57	74	2	823
Total	4,876	1,021	2,535	440	311	9,183

See footnotes at end of section.

Table 1.7 Federal expenditures by activity, 1995/96 to 2004/05										
Scientific activity	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
R&D										
Current expenditures	3,140	3,086	3,062	3,241	3,559	3,770	4,571	4,492	5,233	5,334
Administration of extramural programs	162	164	163	200	186	182	213	227	276	278
Capital expenditures	163	141	154	137	144	198	205	208	181	187
<i>Sub-total R&D</i>	<i>3,465</i>	<i>3,391</i>	<i>3,379</i>	<i>3,578</i>	<i>3,890</i>	<i>4,150</i>	<i>4,989</i>	<i>4,927</i>	<i>5,689</i>	<i>5,798</i>
RSA										
Data collection	923	1,007	964	1,022	1,105	1,231	1,611	1,555	1,663	1,667
Information services	539	523	465	469	486	484	618	622	652	680
Special services and studies	447	463	436	452	485	531	513	587	602	597
Education support	139	139	142	157	168	163	286	177	201	250
Administration of extramural programs	34	33	32	35	40	46	50	54	56	60
Capital expenditures	147	139	91	89	77	102	103	91	125	131
<i>Sub-total RSA</i>	<i>2,228</i>	<i>2,303</i>	<i>2,130</i>	<i>2,224</i>	<i>2,362</i>	<i>2,557</i>	<i>3,180</i>	<i>3,087</i>	<i>3,299</i>	<i>3,385</i>
Total	5,693	5,694	5,509	5,802	6,252	6,707	8,169	8,014	8,988	9,183

Table 1.8 Federal expenditures, by type of science and by performer², 1995/96 to 2004/05

Sector of performance	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^r	2003/04 ^p	2004/05 ^p
in millions of dollars										
Total science:										
Intramural	3,427	3,575	3,351	3,455	3,658	4,043	4,556	4,630	4,855	4,876
Business enterprises	885	801	927	952	926	847	1,108	998	1,041	1,021
Higher education	933	894	860	989	1,173	1,320	1,739	1,803	2,297	2,535
Non-profit institutions	103	112	110	122	181	154	401	200	403	334
Other ³	86	65	39	51	85	93	83	99	85	106
Foreign performers	259	247	222	233	229	250	282	284	307	311
Total	5,693	5,694	5,509	5,802	6,252	6,707	8,169	8,014	8,988	9,183
Natural sciences and engineering:										
Intramural	2,486	2,507	2,417	2,459	2,648	2,872	3,166	3,308	3,437	3,471
Business enterprises	846	767	892	924	896	816	1,071	965	1,007	982
Higher education	773	737	702	836	1,002	1,139	1,341	1,583	1,808	1,950
Non-profit institutions	59	66	57	56	128	98	227	130	338	270
Other ³	69	56	28	42	57	55	43	72	51	74
Foreign performers	144	140	126	134	134	144	157	167	188	196
Total	4,377	4,273	4,222	4,450	4,866	5,124	6,005	6,225	6,829	6,943
Social sciences and humanities:										
Intramural	941	1,068	934	996	1,010	1,171	1,389	1,322	1,419	1,404
Business enterprises	40	34	35	29	30	32	38	33	34	39
Higher education	159	157	158	153	171	181	398	220	489	585
Non-profit institutions	44	46	53	65	52	56	174	71	66	64
Other ³	17	9	11	9	28	38	40	27	32	32
Foreign performers	115	107	96	99	95	105	125	116	119	116
Total	1,316	1,421	1,287	1,352	1,386	1,582	2,164	1,789	2,159	2,240

See footnotes at end of section.

Table 1.9 Federal expenditures on R&D, by type of science and by performer², 1995/96 to 2004/05

Sector of performance	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
Total sciences:										
Intramural	1,727	1,792	1,720	1,743	1,859	2,080	2,103	2,190	2,239	2,234
Business enterprises	665	573	721	749	713	624	862	727	757	726
Higher education	797	761	725	842	1,010	1,170	1,595	1,644	2,117	2,310
Non-profit institutions	59	75	71	82	130	76	233	142	351	280
Provincial and municipal governments	38	27	6	9	13	34	26	26	11	24
Other	27	23	16	29	46	35	33	46	48	57
Foreign performers	151	141	120	124	118	131	137	152	166	167
Total	3,465	3,391	3,379	3,578	3,890	4,150	4,989	4,927	5,689	5,798
Natural sciences and engineering:										
Intramural	1,669	1,724	1,651	1,667	1,774	1,995	2,011	2,073	2,115	2,107
Business enterprises	662	570	720	747	711	622	857	722	752	722
Higher education	713	680	644	762	913	1,063	1,265	1,496	1,713	1,845
Non-profit institutions	34	52	47	43	109	48	202	107	317	248
Provincial and municipal governments	37	25	4	8	13	19	9	24	6	21
Other	23	21	15	27	37	27	24	36	35	41
Foreign performers	114	110	94	97	95	104	112	123	134	133
Total	3,252	3,181	3,174	3,350	3,653	3,879	4,480	4,581	5,072	5,117
Social sciences and humanities:										
Intramural	58	68	69	76	85	85	93	117	124	127
Business enterprises	3	3	2	3	2	2	5	4	5	4
Higher education	85	81	80	80	97	107	330	148	404	465
Non-profit institutions	24	24	24	39	21	28	31	35	34	32
Provincial and municipal governments	1	2	2	1	1	15	17	2	4	4
Other	4	2	1	2	9	8	10	10	14	15
Foreign performers	38	31	27	27	23	27	24	30	32	34
Total	213	210	205	228	237	271	510	346	617	681

See footnotes at end of section.

Table 1.10 Federal expenditures on RSA, by type of science and by performer², 1995/96 to 2004/05

Sector of performance	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
Total sciences:										
Intramural	1,699	1,783	1,631	1,712	1,799	1,963	2,452	2,440	2,616	2,641
Business enterprises	221	228	206	203	212	223	247	272	285	295
Higher education	135	133	135	147	164	150	144	159	181	225
Non-profit institutions	45	37	40	40	51	77	168	58	53	54
Provincial and municipal governments	9	6	6	5	5	3	5	8	9	8
Other	12	11	11	9	20	21	19	19	14	18
Foreign performers	107	105	101	109	111	119	145	131	141	144
Total	2,228	2,303	2,130	2,224	2,362	2,557	3,180	3,087	3,299	3,385
Natural sciences and engineering:										
Intramural	816	783	766	792	874	877	1,156	1,235	1,321	1,364
Business enterprises	184	197	172	177	185	193	214	243	255	261
Higher education	60	58	58	74	89	76	76	88	96	104
Non-profit institutions	25	14	11	14	19	50	25	23	21	22
Provincial and municipal governments	6	5	4	3	3	2	5	5	6	5
Other	4	5	4	4	4	6	4	4	5	7
Foreign performers	30	30	33	37	39	41	45	45	53	63
Total	1,125	1,091	1,048	1,100	1,213	1,245	1,525	1,643	1,757	1,826
Social sciences and humanities:										
Intramural	883	1,000	866	920	925	1,086	1,297	1,205	1,295	1,277
Business enterprises	37	31	33	26	28	30	33	29	29	34
Higher education	75	76	77	73	75	74	68	71	85	120
Non-profit institutions	20	23	29	26	31	28	143	35	32	32
Provincial and municipal governments	3	1	2	2	2	1	0	3	3	3
Other	8	5	7	5	16	15	13	13	10	12
Foreign performers	77	75	69	72	72	78	100	87	88	81
Total	1,103	1,211	1,082	1,124	1,149	1,312	1,654	1,443	1,542	1,559

See footnotes at end of section.

Table 1.11 Federal expenditures, by activity and performer, 2002/03								
Activity	Performer							Total
	Intramural	Business enterprises	Higher education	Non-profit institutions	Provincial and municipal governments	Foreign performers	Other	
in millions of dollars								
R&D								
In-house R&D	1,616	...	...	...	...	...	...	1,616
R&D contracts	30	203	32	5	2	33	9	314
Supporting contracts	92	...	...	...	...	...	...	92
R&D grants and contributions	...	518	1,555	136	24	105	27	2,365
Research fellowships	16	5	57	1	0	15	10	104
Administration of extramural programs	227	...	...	...	...	...	...	227
Capital expenditures	208	...	...	...	...	...	...	208
<i>Sub-total R&D</i>	<i>2,190</i>	<i>727</i>	<i>1,644</i>	<i>142</i>	<i>26</i>	<i>152</i>	<i>46</i>	<i>4,927</i>
RSA								
Data collection	1,450	52	5	23	3	16	6	1,555
Information services ⁴	538	27	10	12	2	30	3	622
Special services and studies ⁵	294	190	4	17	3	73	6	587
Education support	13	4	140	6	0	12	3	177
Administration of extramural programs	54	...	...	...	...	...	...	54
Capital expenditures	91	...	...	...	...	...	...	91
<i>Sub-total RSA</i>	<i>2,440</i>	<i>272</i>	<i>159</i>	<i>58</i>	<i>8</i>	<i>131</i>	<i>19</i>	<i>3,087</i>
Total	4,630	998	1,803	200	34	284	65	8,014

See footnotes at end of section.

Table 1.12 Federal expenditures, by activity and performer, 2003/04

Activity	Performer							Total
	Intramural	Business enterprises	Higher education	Non-profit institutions	Provincial and municipal governments	Foreign performers	Other	
in millions of dollars								
R&D								
In-house R&D	1,656	...	...	...	...	...	...	1,656
R&D contracts	32	233	30	7	5	57	12	376
Supporting contracts	79	...	...	...	...	...	...	79
R&D grants and contributions	...	518	2,027	342	6	92	27	3,012
Research fellowships	16	6	59	1	0	17	10	109
Administration of extramural programs	276	...	...	...	...	...	...	276
Capital expenditures	181	...	...	...	...	...	...	181
<i>Sub-total R&D</i>	<i>2,239</i>	<i>757</i>	<i>2,117</i>	<i>351</i>	<i>11</i>	<i>166</i>	<i>48</i>	<i>5,689</i>
RSA								
Data collection	1,555	55	5	21	3	17	7	1,663
Information services ⁴	563	30	13	10	2	32	2	652
Special services and studies ⁵	301	195	6	15	4	78	2	602
Education support	16	4	157	6	0	14	3	201
Administration of extramural programs	56	...	...	...	...	...	...	56
Capital expenditures	125	...	...	...	...	...	...	125
<i>Sub-total RSA</i>	<i>2,616</i>	<i>285</i>	<i>181</i>	<i>53</i>	<i>9</i>	<i>141</i>	<i>14</i>	<i>3,299</i>
Total	4,855	1,041	2,297	403	19	307	66	8,988

Table 1.13 Federal expenditures, by activity and performer, 2004/05								
Activity	Performer							Total
	Intramural	Business enterprises	Higher education	Non-profit institutions	Provincial and municipal governments	Foreign performers	Other	
in millions of dollars								
R&D								
In-house R&D	1,650	...	...	...	...	...	...	1,650
R&D contracts	31	263	42	11	4	44	14	409
Supporting contracts	73	...	...	...	...	...	...	73
R&D grants and contributions	...	457	2,202	268	20	106	31	3,084
Research fellowships	15	6	67	1	0	17	11	117
Administration of extramural programs	278	...	...	...	...	...	...	278
Capital expenditures	187	...	...	...	...	...	...	187
<i>Sub-total R&D</i>	<i>2,234</i>	<i>726</i>	<i>2,310</i>	<i>280</i>	<i>24</i>	<i>167</i>	<i>57</i>	<i>5,798</i>
RSA								
Data collection	1,555	54	5	23	3	20	7	1,667
Information services ⁴	588	25	19	10	2	31	5	680
Special services and studies ⁵	287	211	4	14	3	77	2	597
Education support	21	5	197	7	0	17	4	250
Administration of extramural programs	60	...	...	...	...	...	...	60
Capital expenditures	131	...	...	...	...	...	...	131
<i>Sub-total RSA</i>	<i>2,641</i>	<i>295</i>	<i>225</i>	<i>54</i>	<i>8</i>	<i>144</i>	<i>18</i>	<i>3,385</i>
Total	4,876	1,021	2,535	334	32	311	74	9,183

See footnotes at end of section.

Table 1.14 Performers of federal expenditures on S&T, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
in millions of dollars										
ACOA	34	21	7	29	27	27	14	51	67	117
AECB	7	4	3	3	...	...	...	...	...	...
C&I	1	2	2	2	3	2	4	3	3	4
CBC	7	7	6	...	...	...	...	...	...	...
CCMD	2	2	1	2	1	1	1	1	2	2
CFIA	..	28	30	30	32	37	38	54	48	45
CHRC	1	0	1	1	1	...	...	...	...	...
CMHC	21	19	20	25	30	35	24	27	31	34
CMN	29	35	26	23	23	26	28	31	46	65
CNSC	...	...	...	...	3	4	3	4	4	4
COL	3	4	1	1	1	1	1	2	2	2
CSTM	24	25	24	23	24	26	29	30	44	33
EPC	1	0	0	...	...	...	...	...	...	...
FIN	20	19	20	22	26	25	28	29	27	27
FORD - / CED(Qué)	25	29	22	23	13	10	17	27	27	25
IAND	8	5	4	2	4	4	4	6	4	5
JUS	6	6	6	9	14	14	16	23	21	21
NEB	4	3	2	1	1	1	1	1	1	1
NFB	1	1	1	1	1	1	2	1	1	1
NGC	37	33	46	49	42	43	45	51	49	50
NREV / CCRA	7	6	7	9	9	8	9	9	10	10
PCO	2	0	0	0	5	5	6	14	5	4
PSCC	1	2	7	6	7	7	7	8	7	5
PW&GS	6	6	5	6	6	7	9	8	8	8
RCMP	0	1	1	1	1	1	1	1	2	2
SGEN	6	6	5	5	5	5	6	6	6	7
SWC	1	1	2	4	3	3	5	5	5	5
TC	21	17	20	20	17	18	23	27	27	30
WEDC	16	14	9	13	24	17	31	26	26	26
Minor S&T performers	292	297	278	310	324	328	352	504	472	530
Major S&T performers	5,401	5,397	5,231	5,492	5,928	6,379	7,817	7,510	8,516	8,653
Total	5,693	5,694	5,509	5,802	6,252	6,707	8,169	8,014	8,988	9,183

Table 1.15 Federal expenditures on intramural R&D, by department or agency, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
in millions of dollars										
AGR	317	346	338	333	351	339	318	246	226	232
AECL	143	219	154	114	123	128	168	136	167	150
CFIA	...	12	13	11	10	13	12	19	18	16
CSA	63	57	49	81	51	166	152	154	148	151
EC	131	113	106	93	115	125	147	182	198	197
F & O	89	92	75	105	108	128	119	138	122	124
HC	33	41	40	39	43	41	72	80	93	84
IDRC	20	28	27	28	38	36	31	27	28	32
IND	82	43	38	39	39	42	48	49	50	57
NDEF	127	136	140	142	173	154	139	161	158	158
NRCan	342	320	309	303	307	334	243	232	224	228
NRC	294	300	340	349	389	442	496	570	591	593
NSERC	17	17	17	20	22	25	31	35	35	35
Other	69	68	74	86	90	107	127	161	181	177
Total	1,727	1,792	1,720	1,743	1,859	2,080	2,103	2,190	2,239	2,234

1. 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 1999/00, \$50M for the Sustainable Development Technology Fund in 2001/02, \$50M for the Canadian Foundation for Climate and Atmospheric Sciences and \$125M for the Sustainable Development Technology Fund in 2003/04, and \$100M forecasted for the Sustainable Development Technology Fund in 2004/05).
 2. As reported by the funder, the federal government, not by the performers.
 3. Other Canadian performers include provincial and municipal governments.
 4. Includes information services and museum services.
 5. Includes testing and standardization, economic and feasibility studies and operations and policy studies.
 6. Negative amounts denote net transfer from budget for S&T.
- * Census year.

2. Federal personnel

2. Federal personnel

In this section intramural expenditure data are complemented by data on the person-years devoted to scientific 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.

Personnel statistics for 2004/05 were based on the plans of departments and agencies at the beginning of the fiscal year.

In 2004/05, 34,960 federal government person-years were devoted to S&T activities, a 1.3% increase from the 34,516 person-years reported for 2003/04. The majority (58%) of person-years were engaged in RSA activities in 2004/05.

The Natural Sciences and Engineering field accounted for 69% of the estimated total personnel in 2004/05, of which 56% were engaged in Research and Development (R&D). In contrast, personnel in the Social Sciences and Humanities will account for 31%, of which only 7% will be engaged in R&D.

For the Social Sciences and Humanities, Statistics Canada remains the largest employer of personnel for S&T. Note that the increases for Statistics Canada from 2000/01 to 2002/03 were mostly due to the 2001 Census.

A breakdown of S&T personnel by category shows the Scientific and professional category as the largest, with 43% of all personnel in 2004/05 falling into this category.

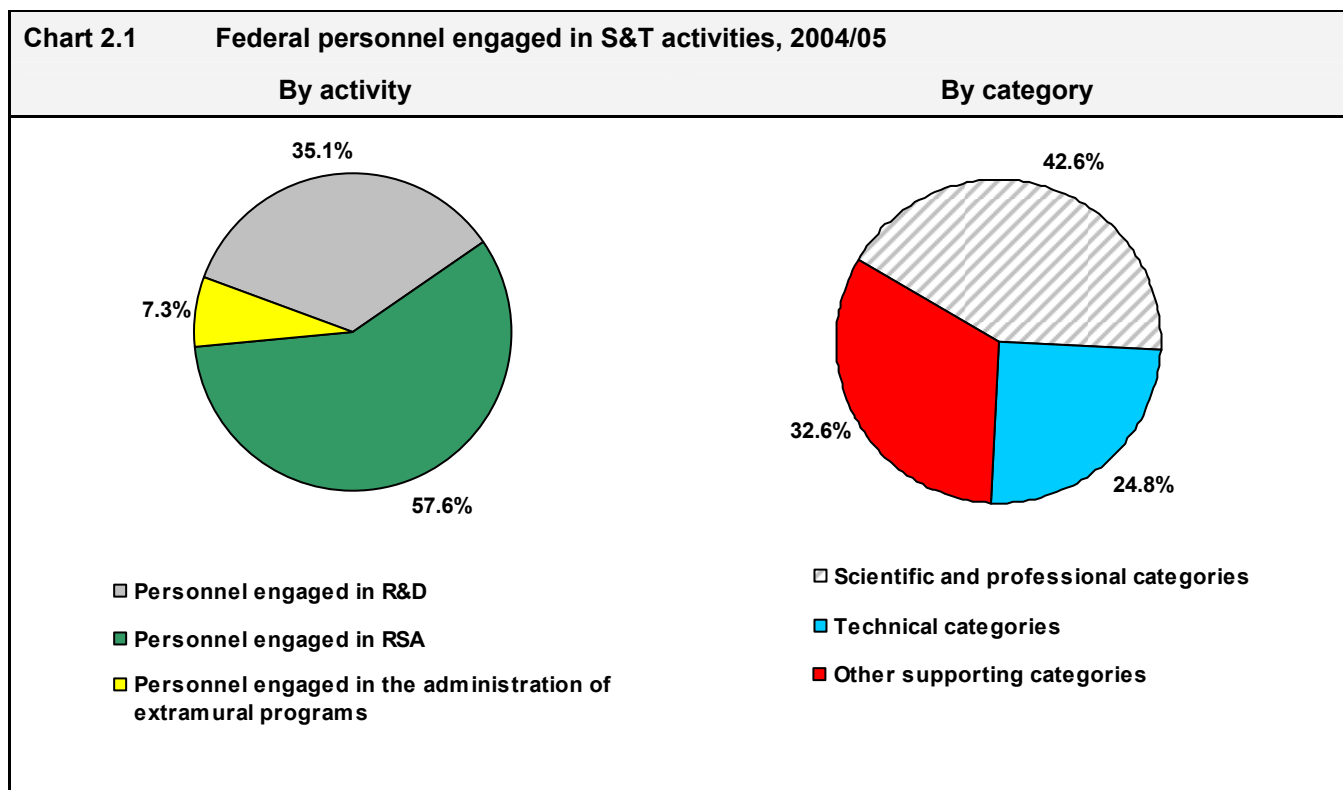


Chart 2.2 Federal personnel engaged in S&T activities, by department or agency, 2003/04 and 2004/05

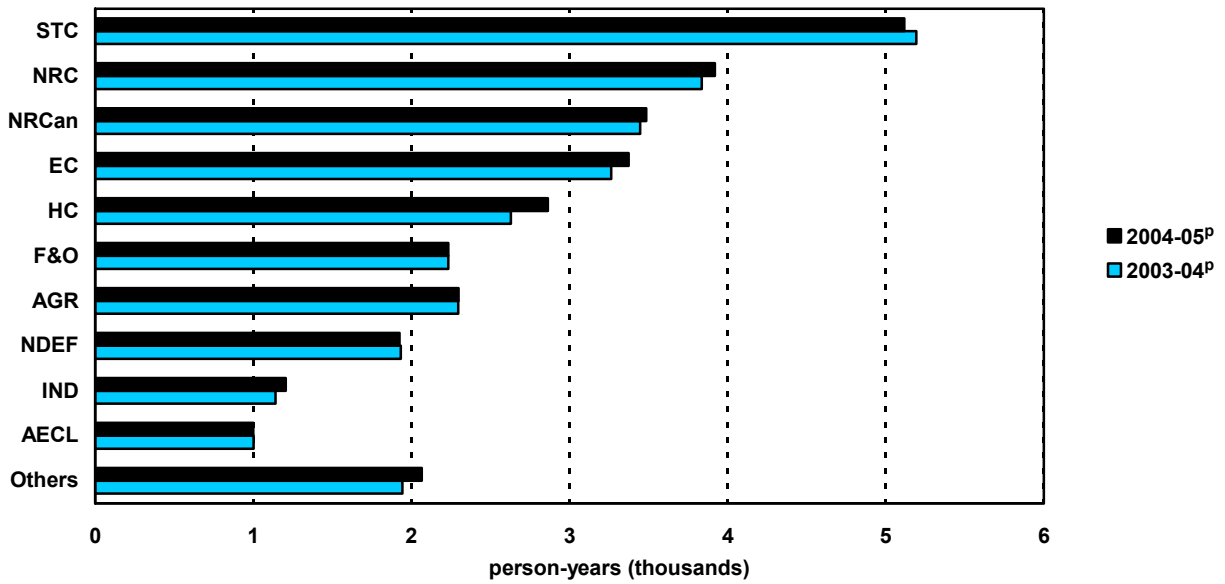


Chart 2.3 Federal personnel engaged in R&D activities, by department or agency, 2003/04 and 2004/05

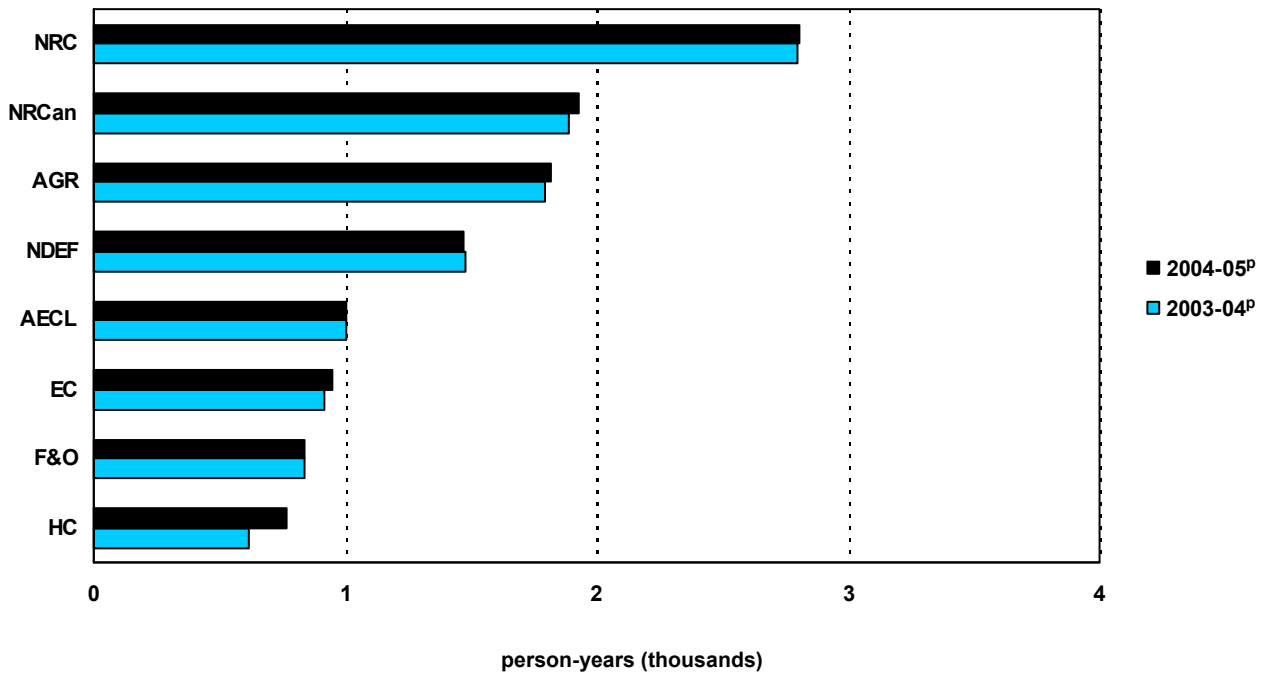


Table 2.1 Federal personnel engaged in S&T activities, 1995/96 to 2004/05										
Activity	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
	person-years									
Total S&T										
Research and development	14,312	13,645	12,798	12,533	12,765	13,439	12,323	12,331	12,015	12,261
Related scientific activities	16,021	15,329	15,437	15,372	16,189	16,955	19,805	20,604	20,077	20,136
Administration of extramural R&D programs	1,243	1,191	1,155	1,196	1,315	1,263	1,417	1,634	1,909	2,035
Administration of extramural RSA programs	430	429	398	384	441	482	491	555	514	528
Total	32,005	30,594	29,787	29,485	30,711	32,139	34,035	35,125	34,516	34,960
Natural sciences and engineering:										
Research and development	13,926	13,235	12,429	12,179	12,353	13,034	11,829	11,819	11,541	11,764
Related scientific activities	7,129	6,487	6,656	6,457	7,035	6,957	8,935	9,925	10,054	10,308
Administration of extramural R&D programs	1,045	1,025	998	1,039	1,144	1,086	1,211	1,407	1,679	1,789
Administration of extramural RSA programs	255	259	230	217	241	273	267	313	297	308
Total	22,355	21,006	20,313	19,891	20,773	21,349	22,241	23,464	23,572	24,168
Social sciences and humanities:										
Research and development	385	410	369	355	412	405	494	512	475	497
Related scientific activities	8,892	8,842	8,781	8,915	9,154	9,998	10,871	10,679	10,023	9,828
Administration of extramural R&D programs	198	166	157	157	171	177	205	228	230	245
Administration of extramural RSA programs	175	170	168	167	200	209	224	242	217	221
Total	9,650	9,588	9,475	9,594	9,938	10,790	11,794	11,660	10,944	10,792

Table 2.2 Federal personnel engaged in S&T activities, by major department or agency, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^p	2004/05 ^p
	person-years									
AECL	2,560	1,700	1,460	1,195	1,170	886	950	1,164	1,002	1,000
AGR	3,365	2,981	2,593	2,569	2,546	2,869	2,720	2,293	2,296	2,299
CH	628	565	537	...	...	...	...	54	55	45
EC	3,417	2,967	2,901	2,844	3,001	2,992	3,013	3,157	3,263	3,374
F&O	2,318	2,319	2,124	2,059	2,257	2,400	2,373	2,371	2,234	2,233
HC	1,334	1,622	1,872	1,807	1,911	1,842	2,471	2,507	2,630	2,863
IND	880	901	931	1,001	987	1,072	950	1,061	1,141	1,205
NDEF	1,248	1,428	1,424	1,567	1,560	1,617	1,428	1,828	1,933	1,925
NRC	3,099	3,097	3,202	3,266	3,310	3,426	3,612	3,890	3,838	3,919
NRCan	3,265	3,052	2,848	2,698	2,807	2,870	3,161	3,532	3,448	3,486
STC	4,894	5,004	4,959	5,042	5,096	5,811	6,320	5,964	5,194	5,118
Other	4,997	4,958	4,936	5,437	6,066	6,354	7,037	7,304	7,482	7,493
Total	32,005	30,594	29,787	29,485	30,711	32,139	34,035	35,125	34,516	34,960

Table 2.3 Federal personnel engaged in R&D, by major department or agency, 1995/96 to 2004/05

Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
	person-years									
AECL	2,015	1,700	1,460	1,195	1,170	886	950	1,164	1,002	1,000
AGR	3,011	2,820	2,427	2,426	2,410	2,800	2,664	1,810	1,795	1,815
EC	976	832	771	736	830	840	844	885	914	945
F&O	902	877	798	772	853	902	895	891	834	834
HC	353	477	539	517	515	524	665	699	616	769
IND	411	360	350	395	401	449	422	479	510	513
NDEF	1,179	1,236	1,169	1,298	1,291	1,348	1,298	1,484	1,475	1,468
NRC	2,692	2,651	2,729	2,777	2,808	2,934	2,507	2,723	2,795	2,808
NRCan	2,646	2,536	2,371	2,284	2,306	2,435	1,689	1,845	1,889	1,927
STC	127	125	144	141	158	167	194	203	151	152
Other	1,243	1,222	1,195	1,188	1,338	1,417	1,611	1,783	1,943	2,065
Total	15,555	14,836	13,953	13,729	14,080	14,702	13,739	13,966	13,924	14,296

Chart 2.4 Federal personnel engaged in R&D and S&T activities, 1995/96 to 2004/05

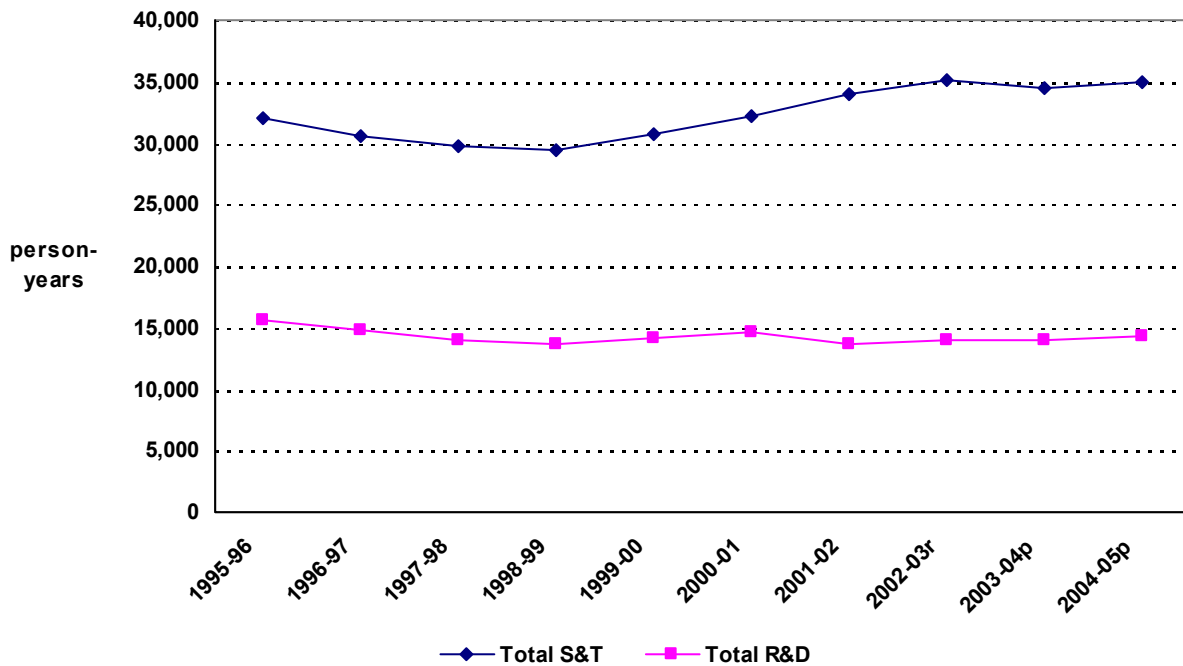


Table 2.4 Federal personnel engaged in S&T activities, by category and activity, 1995/96 to 2004/05

Category ¹	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^p	2004/05 ^p
	person-years									
S&T personnel										
Executive	653	...	...	...	...	...	...	...	...	...
Scientific and professional	11,327	11,770	11,544	11,732	12,142	12,540	13,098	14,481	14,601	14,885
Administrative and foreign service	4,590	...	...	...	...	...	...	...	...	...
Technical	7,846	7,773	7,653	7,426	7,775	7,854	8,635	8,905	8,612	8,679
Administrative support	4,786	11,051	10,590	10,327	10,794	11,745	12,302	11,739	11,303	11,396
Operational	2,726	...	...	...	...	...	...	...	...	...
Military personnel	76	...	...	...	...	...	...	...	...	...
Total S&T personnel²	32,005	30,594	29,787	29,485	30,711	32,139	34,035	35,125	34,516	34,960
R&D Personnel										
Executive	229	...	...	...	...	...	...	...	...	...
Scientific and professional	5,999	6,312	5,848	5,852	6,018	6,125	5,606	6,190	6,224	6,304
Administrative and foreign service	1,560	...	...	...	...	...	...	...	...	...
Technical	4,296	4,098	3,906	3,824	3,870	3,815	3,782	3,773	3,666	3,738
Administrative support	1,727	4,426	4,198	4,053	4,192	4,762	4,351	4,003	4,035	4,253
Operational	1,677	...	...	...	...	...	...	...	...	...
Military personnel	67	...	...	...	...	...	...	...	...	...
Total R&D personnel²	15,555	14,836	13,953	13,729	14,080	14,702	13,739	13,966	13,924	14,296

1. Questions on Personnel resources have been compressed from seven to three principal categories; Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).
2. Including Administration of Extramural Programs Personnel.

Table 2.5 Federal personnel engaged in S&T, by category and by major department or agency, 2004/05								
Department or agency	R&D personnel ¹				S&T personnel ¹			
	Scientific and professional ²	Technical	Other ³	Total	Scientific and professional ²	Technical	Other ³	Total
	person-years							
AECL	570	310	120	1,000	570	310	120	1,000
AGR	547	721	547	1,815	758	854	687	2,299
EC	575	238	132	945	1,648	1,008	718	3,374
F&O	318	324	192	834	878	829	526	2,233
HC	310	288	172	769	1,695	581	587	2,863
IND	259	55	199	513	661	63	481	1,205
NDEF	742	328	398	1,468	978	519	429	1,926
NRC	1,093	698	1,017	2,808	1,526	974	1,419	3,919
NRCan	1,077	596	254	1,927	1,904	977	605	3,486
STC	98	13	41	152	1,295	1,334	2,489	5,118
Other	715	167	1,181	2,065	2,972	1,230	3,335	7,537
Total	6,304	3,738	4,253	14,296	14,885	8,679	11,396	34,960

1. Including Administration of Extramural Programs Personnel.

2. Including executives.

3. Including administration and foreign service, administrative support, operations and military personnel.

Table 2.6 Federal personnel engaged in S&T activities in the natural sciences and engineering, by category and activity, 1995/96 to 2004/05

Category	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
	person-years									
S&T personnel										
Executive	329	...	...	...	...	...	...	...	...	...
Scientific and professional ¹	8,709	8,937	8,655	8,681	9,005	9,158	9,594	10,642	10,805	11,086
Administrative and foreign service	2,231	...	...	...	...	...	...	...	...	...
Technical ¹	6,131	6,020	5,816	5,553	5,833	5,742	6,343	6,582	6,427	6,494
Administrative support ¹	2,591	6,049	5,842	5,657	5,935	6,449	6,304	6,241	6,339	6,589
Operational	2,308	...	...	...	...	...	...	...	...	...
Military personnel	54	...	...	...	...	...	...	...	...	...
Total S&T personnel²	22,355	21,006	20,313	19,891	20,773	21,349	22,241	23,464	23,572	24,168
R&D personnel										
Executive	204	...	...	...	...	...	...	...	...	...
Scientific and professional ¹	5,783	6,032	5,609	5,617	5,749	5,838	5,250	5,804	5,853	5,920
Administrative and foreign service	1,461	...	...	...	...	...	...	...	...	...
Technical ¹	4,231	4,039	3,837	3,761	3,795	3,750	3,701	3,704	3,601	3,671
Administrative support ¹	1,570	4,188	3,981	3,839	3,953	4,532	4,088	3,718	3,766	3,962
Operational	1,668	...	...	...	...	...	...	...	...	...
Military personnel	54	...	...	...	...	...	...	...	...	...
Total R&D personnel²	14,971	14,260	13,427	13,217	13,497	14,120	13,040	13,226	13,220	13,553

1. Questions on personnel resources have been compressed from seven to three principal categories: Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).
2. Including Administration of Extramural Programs Personnel.

Table 2.7 Federal personnel engaged in S&T activities in the social sciences and humanities, by category and activity, 1995/96 to 2004/05

Category	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^p	2004/05 ^p
	person-years									
S&T personnel										
Executive	324	...	...	...	...	...	...	...	...	...
Scientific and professional ¹	2,618	2,833	2,889	3,051	3,137	3,382	3,504	3,839	3,795	3,799
Administrative and foreign service	2,359	...	...	...	...	...	...	...	...	...
Technical ¹	1,715	1,752	1,837	1,873	1,942	2,112	2,292	2,323	2,185	2,186
Administrative support ¹	2,195	5,003	4,748	4,670	4,859	5,296	5,998	5,498	4,964	4,807
Operational	417	...	...	...	...	...	...	...	...	...
Military personnel	22	...	...	...	...	...	...	...	...	...
Total S&T personnel²	9,650	9,588	9,475	9,594	9,938	10,790	11,794	11,660	10,944	10,792
R&D personnel										
Executive	25	...	...	...	...	...	...	...	...	...
Scientific and professional ¹	217	279	240	236	269	287	356	387	371	384
Administrative and foreign service	98	...	...	...	...	...	...	...	...	...
Technical ¹	65	58	69	63	75	65	81	69	65	68
Administrative support ¹	157	238	217	213	239	230	263	284	269	291
Operational	9	...	...	...	...	...	...	...	...	...
Military personnel	13	...	...	...	...	...	...	...	...	...
Total R&D personnel²	584	576	526	512	583	582	699	740	705	743

1. Questions on personnel resources have been compressed from seven to three principal categories: Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).
2. Including Administration of Extramural Programs Personnel.

3. Extramural expenditures

3. Extramural expenditures

This section focuses on federal government expenditures for S&T performed extramurally, that is for S&T performed outside of its own laboratories. Aggregate payments to industries, universities, private non-profit organizations and to foreign and other performers are presented. It was estimated that in 2004/05 the government will spend \$4.3 billion or 46.9% of its total S&T expenditures extramurally. The major recipients of these funds will be universities (\$2,535 million) and business enterprises (\$1,021 million). In addition, private non-profit organizations will receive \$334 million, foreign performers \$311 million and others, including individuals and provincial and municipal governments, \$107 million.

Extramural payments take the form of a contract, a grant or a contribution. Contracts, normally awarded as a result of competitive bidding, provide a service or perform an activity required by a federal department or agency. Almost all of these contracts are awarded to business enterprises. Payments for university and industry support programs are normally in the form of a grant or contribution.

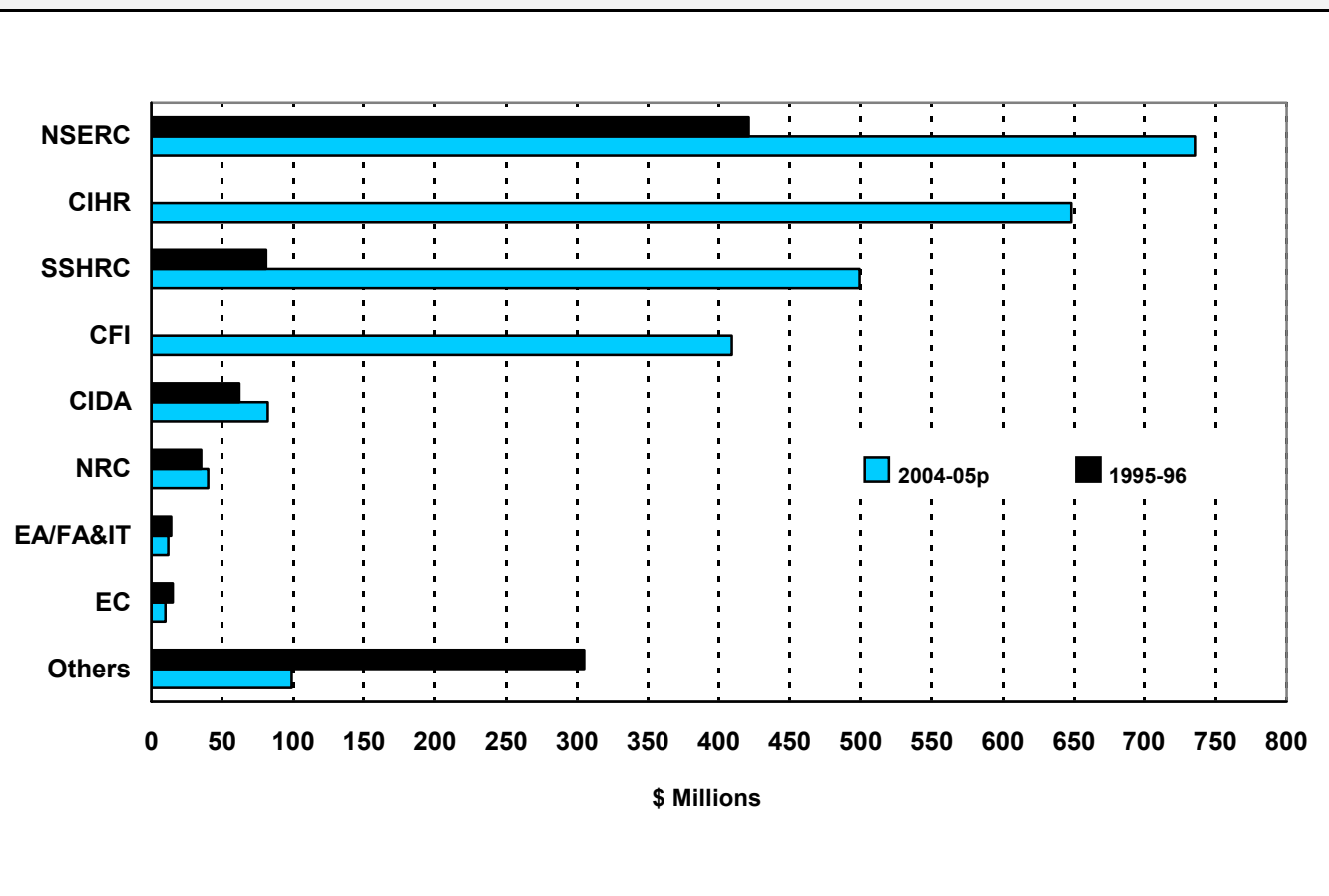
Business enterprises

- Total federal S&T payments to the business enterprise sector are estimated to be \$1,021 million in 2004/05, a 1.9% decrease from 2003/04 forecasted expenditures of \$1,041 million.
- R&D payments in 2004/05 amount to \$726 million, over a 4% decrease from 2003/04 forecasted expenditures of \$757 million.
- R&D contracts totalled \$233 million in 2003/04, and increased 12.9% in 2004/05 to \$263 million.
- R&D contracts from the department of National Defence (\$133 million) and the Canadian Space Agency (\$85 million) accounted for 83% of the total R&D contracts in 2004/05.
- R&D grants and contributions totalled \$518 million in 2003/04, and decreased 11.8% in 2004/05 to \$457 million.
- R&D grants by Industry Canada (\$236 million) and the National Research Council (\$85 million) accounted for 70% of the total R&D grants in 2004/05.

Higher education

- Universities were to receive funding of \$2,310 million for R&D and \$225 million for RSA in 2004/05. The three research councils: the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council, and also the Canada Foundation for Innovation are the major federal government funders of R&D performed in the higher education sector.
- R&D grants and contributions represent 95% of the total R&D payments to the higher education sector
- The 2004/05 estimated combined budget for the granting councils is \$2,292 million.
- Of the three granting councils, the Natural Sciences and Engineering Research Council is the largest funder of university research. Its estimated R&D expenditures to universities were \$653 million in 2004/05, a 3.7% increase.
- The Canadian Institutes of Health Research planned to spend an estimated \$648 million to support S&T activities in universities.
- The Social Sciences and Humanities Research Council planned to spend an estimated \$499 million to support S&T activities in universities.

Chart 3.1 Federal S&T expenditures in the higher education sector, by department or agency, 1995/96 and 2004/05



Foreign

- Total federal S&T payments to the foreign sector were estimated to be \$311 million in 2004/05.
- Payments to organizations in foreign countries are dominated by those of CIDA (\$98 million), NDEF (\$59 million) and IDRC (\$49 million) which account for 66% of total foreign S&T expenditures of \$311 million.

Table 3.1 Federal extramural expenditures for S&T, by type of payment and sector of performance, 2004/05

Payment	Business enterprises	Higher education	Non-profit institutions	Other	Foreign performers	Total
in millions of dollars						
R&D contracts	263	42	11	18	44	378
R&D grants and contributions	457	2,202	268	51	106	3,084
Research fellowships	6	66	1	12	17	102
RSA	295	225	54	26	144	744
Total	1,021	2,535	334	107	311	4,308

Table 3.2 Federal extramural expenditures for S&T by sector of performance, 1995/96 to 2004/05										
Sector of performance	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
	in millions of dollars									
Business enterprises	885	801	927	952	926	847	1,108	998	1,041	1,021
Higher education	933	894	860	989	1,173	1,320	1,739	1,803	2,297	2,535
Non-profit institutions	103	112	111	122	181	154	401	200	404	334
Provincial and municipal governments	47	32	12	14	18	37	31	34	19	32
Other	39	33	27	37	66	56	53	65	64	75
Foreign performers	258	246	221	233	229	250	282	284	307	311
Total	2,266	2,119	2,158	2,347	2,594	2,664	3,614	3,384	4,132	4,308
	percent									
Business enterprises	39	38	43	40	36	32	31	30	25	24
Higher education	41	42	40	42	45	49	48	53	56	59
Non-profit institutions	5	5	5	5	7	6	11	6	10	8
Provincial and municipal governments	2	2	1	1	1	2	1	1	1	1
Other	2	2	1	2	2	2	1	2	1	1
Foreign performers	11	11	10	10	9	9	8	8	7	7
Total	100	100	100	100	100	100	100	100	100	100

Table 3.3 Federal extramural expenditures for R&D, by sector of performance, 1995/96 to 2004/05

Sector of performance	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^f	2003/04 ^p	2004/05 ^p
in millions of dollars										
Business enterprises	665	573	721	749	713	624	862	726	757	726
Higher education	797	761	725	842	1,010	1,170	1,595	1,644	2,117	2,310
Non-profit institutions	59	75	71	82	130	76	233	142	351	280
Provincial and municipal governments	38	27	6	9	13	34	26	26	10	24
Other	27	23	16	29	46	35	35	46	50	57
Foreign performers	151	141	120	124	118	131	136	153	166	167
Total	1,737	1,600	1,659	1,835	2,031	2,070	2,887	2,737	3,451	3,564
percent										
Business enterprises	38	36	43	41	35	30	30	27	22	20
Higher education	46	47	44	46	50	56	55	60	61	65
Non-profit institutions	3	5	4	4	6	4	8	5	10	8
Provincial and municipal governments	2	2	1	0	1	2	1	1	0	1
Other	2	1	1	2	2	2	1	2	2	1
Foreign performers	9	9	7	7	6	6	5	5	5	5
Total	100	100	100	100	100	100	100	100	100	100

Table 3.4 Federal extramural expenditures for S&T, by department or agency and sector of performance, 2004/05

Department or agency	Business enterprises	Higher education	Non-profit institutions	Other	Foreign performers	Total
in millions of dollars						
ACOA	63	33	7	12	0	115
CFI	0	409	0	0	0	409
CIDA	182	82	11	10	98	383
CIHR	0	648	12	6	10	676
CSA	107	10	0	0	31	148
EC	41	10	108	6	6	171
FAC	0	12	0	0	28	40
GC	0	0	82	0	0	82
HC	14	8	15	15	0	52
IDRC	0	6	2	1	49	58
IND	236	0	11	0	0	247
NDEF	190	8	3	1	59	261
NRC	87	40	0	2	6	135
NRCan	29	5	18	4	2	58
NSERC	8	736	7	11	12	774
SSHRC	0	499	3	11	3	516
WEDC	7	12	7	0	0	26
Other	57	17	48	28	7	157
Total	1,021	2,535	334	107	311	4,308

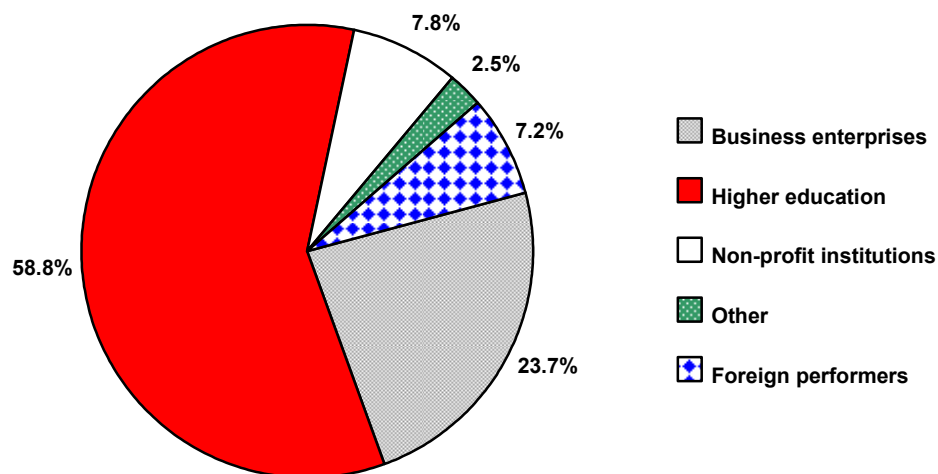
Chart 3.2 Federal extramural expenditures for S&T, by sector of performance, 2004/05

Table 3.5 Federal extramural expenditures for R&D, by department or agency and sector of performance, 2004/05

Department or agency	Business enterprises	Higher education	Non-profit institutions	Other	Foreign performers	Total
in millions of dollars						
ACOA	63	33	7	12	0	115
AECL	7	0	0	0	5	12
CED (Qué)	18	2	0	0	0	20
CFI	0	409	0	0	0	409
CIDA	1	27	2	8	28	66
CIHR	0	642	12	6	10	670
CSA	105	10	0	0	31	146
EC	15	8	102	2	1	128
GC	0	0	82	0	0	82
IDRC	0	5	1	1	41	48
IND	236	0	11	0	0	247
NDEF	132	8	3	1	35	179
NRC	87	40	0	2	6	135
NRCan	28	3	17	1	1	50
NSERC	5	653	5	11	7	681
SSHRC	0	441	1	8	0	450
WEDC	7	12	7	0	0	26
Other	22	17	30	29	2	100
Total	726	2,310	280	81	167	3,564

Chart 3.3 Federal extramural expenditures for R&D, by sector of performance, 2004/05

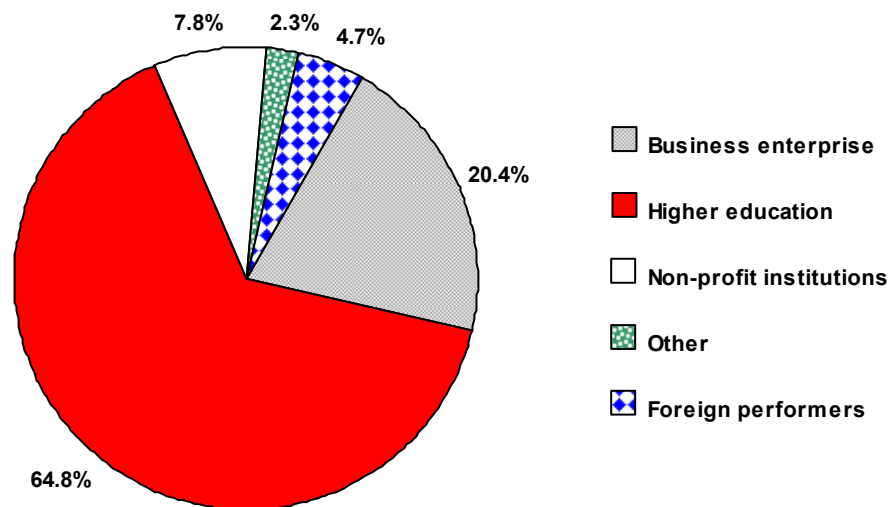


Table 3.6 Federal S&T expenditures in the business enterprise sector, by type of payment and department or agency, 1995/96 to 2004/05										
Payment and department	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^f	2003/04 ^P	2004/05 ^P
	in millions of dollars									
Total S&T payments	885	801	927	952	926	847	1,108	998	1,041	1,021
R&D payments (total)	665	573	721	749	713	624	862	726	757	726
R&D contracts (total)	341	267	295	381	362	227	270	203	233	263
AECL	15	17	14	16	7	5	6	6	7	7
CSA	185	142	143	223	213	88	106	90	84	85
EC	12	9	8	10	8	8	11	14	15	15
F&O	8	1	1	1	0	0	2	0	2	2
NDEF	88	73	105	107	110	108	122	72	104	133
NRCan	12	10	11	12	10	6	5	2	2	2
TC	11	8	7	8	7	7	8	7	7	8
Other	10	7	6	4	7	5	12	12	12	11
R&D grants and contributions (total)	321	300	422	363	340	393	587	518	518	457
ACOA	11	5	7	11	8	15	10	26	36	63
CED (Qué)	15	9	8	4	5	4	11	21	19	18
CSA	0	0	0	1	1	12	26	21	20	20
IND	173	177	298	223	191	237	419	321	322	236
NRC	76	78	82	97	87	87	80	75	85	85
NRCan	16	13	10	15	29	22	21	32	26	26
NSERC	13	7	12	7	6	9	9	14	0	0
WEDC	12	6	4	2	11	6	10	7	7	7
Other	5	4	1	3	2	1	1	1	3	2
Research fellowships (total)	3	7	4	5	12	4	5	5	6	6
Other S&T payments (total)	221	228	206	203	212	223	246	272	285	295
CIDA	160	162	140	143	157	165	166	161	155	181
EC	16	22	17	24	22	21	25	21	26	26
F&O	11	5	4	5	1	1	1	5	3	3
HRDC	4	2	3	3	4	4	6	4	5	0
NDEF	0	12	15	11	11	11	30	61	77	58
NRCan	4	6	7	7	6	7	1	1	1	1
TC	1	1	2	1	1	1	1	2	1	2
Other	25	18	18	9	10	13	17	17	17	24

Table 3.7 Federal S&T expenditures in the higher education sector, by type of payment and department or agency 1995/96 to 2004/05

Payment and department	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^r	2003/04 ^p	2004/05 ^p
	in millions of dollars									
Total S&T payments	933	894	860	989	1,173	1,320	1,739	1,803	2,297	2,535
R&D payments (total)	797	761	725	842	1,010	1,170	1,595	1,644	2,117	2,310
R&D grants (total)	724	702	671	789	958	1,118	1,527	1,555	2,027	2,202
FORD / CED (Qué)	5	8	3	5	0	0	1	0	3	2
CFI	...	...	...	27	114	183	231	324	373	409
CIHR	...	...	...	...	266	330	450	517	573	597
EC	12	5	8	6	7	6	6	4	5	5
HC	9	10	7	4	4	2	0	4	3	3
IDRC	3	4	2	3	3	3	2	4	4	5
MRC	220	208	204	233	...	...	...	...	...	...
NRC	35	33	36	39	39	44	51	50	40	40
NSERC	368	372	351	394	426	442	454	495	603	647
SSHRC	58	53	54	55	77	88	307	127	385	441
Other	14	9	6	23	22	20	25	30	38	53
R&D contracts (total)	30	26	25	23	21	22	27	32	30	42
CIDA	9	9	8	8	8	8	8	8	8	12
CSA	6	5	7	7	6	8	9	11	10	10
NDEF	6	5	5	3	2	3	3	4	3	8
NRCan	2	1	1	1	1	0	0	0	1	1
Other	7	6	4	4	4	3	7	9	8	11
Research fellowships (total)	43	32	29	30	31	30	41	57	59	66
Education support (total)	110	109	113	123	136	130	127	140	157	197
CIDA	35	36	33	33	35	31	32	31	32	46
CIHR	...	...	...	...	8	7	5	5	5	6
FA&IT	14	14	18	14	16	13	12	...	...	...
FAC	...	...	...	...	...	...	...	12	12	12
MRC	6	6	7	9	...	...	...	...	...	...
NSERC	38	36	37	48	60	57	59	67	74	82
SSHRC	16	14	17	19	17	22	17	20	31	48
Other	1	3	1	0	0	0	2	5	3	3
Other S&T payments (total)	25	25	22	24	27	20	17	19	24	28

Table 3.8 Federal S&T expenditures in the Canadian non-profit institutions sector, by funding department or agency, 1995/96 to 2004/05										
Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
in millions of dollars										
AGR	1	1	1	1	15	3	5	5	5	0
CED (Qué)	3	9	9	12	5	4	2	1	1	1
CIDA	10	9	8	9	8	8	8	9	8	11
CIHR	...	...	...	...	5	11	2	11	12	12
EC	8	4	4	5	67	7	63	10	183	108
GC	...	...	...	...	...	...	33	60	78	82
HC	14	15	12	8	4	4	4	15	17	15
HRDC	22	20	25	40	25	30	18	21	18	...
HRSD	...	...	...	...	...	...	...	...	...	9
IND	7	9	9	4	4	4	154	1	11	11
MRC	3	5	5	7	...	...	...	...	...	...
NRCan	21	16	14	12	14	14	64	15	18	18
SDC	...	...	...	...	...	...	...	...	...	8
SSHRC	2	2	3	2	2	2	2	3	3	4
WEDC	2	5	2	2	3	10	16	8	7	7
Other	10	17	19	20	29	57	30	41	43	48
Total	103	112	111	122	181	154	401	200	404	334

Table 3.9 Federal S&T expenditures in the foreign sector, by department or agency, 1995/96 to 2004/05										
Department or agency	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03 ^r	2003/04 ^p	2004/05 ^p
in millions of dollars										
CIDA	80	83	74	83	86	109	134	101	97	98
CIHR	...	...	...	...	5	7	9	9	10	10
CSA	35	40	25	26	27	22	22	33	30	31
FA&IT	32	31	27	25	27	23	25	...	...	...
FAC	...	...	...	...	...	...	...	29	28	28
IDRC	52	40	32	31	28	35	32	41	43	49
MRC	7	6	5	5	...	...	...	...	...	...
NDEF	8	5	18	17	15	15	16	32	60	59
NRC	9	11	9	9	9	12	11	11	9	6
NRCan	2	2	2	3	2	2	2	2	2	2
NSERC	9	8	8	10	11	11	11	11	12	12
SSHRC	8	7	7	8	3	2	3	2	2	3
Other	16	13	14	16	16	12	17	13	14	13
Total	258	246	221	233	229	250	282	284	307	311

4. Federal scientific activities by province and territories

4. Federal scientific activities by province and territories

This section presents the geographic distribution of federal government resources on S&T. Departments and agencies of the federal government were asked to identify staff and expenditures of their scientific establishments by province and territory.

Since no attempt is made to forecast or estimate provincial expenditures, only actual expenditures after the close of the fiscal year are obtained. Thus provincial data are available only to 2002/03.

In 2002/03, the federal government spent a total of \$8.0 billion on S&T. Of this amount, \$4.7 billion, or 64%, is assigned to provinces and territories. The rest consists of categories of expenditures which are not distributed geographically. They are the following:

- All federal expenditures in the National Capital Region (NCR) for the performance of S&T in federal institutions (intramural S&T). These expenditures were \$2,608 million.
- All payments abroad for S&T. These were \$284 million.
- Various other categories of federal expenditures which could not be assigned geographically. These amounted to \$408 million.

Expenditures and personnel for S&T performed by the federal government in the NCR are excluded from the provincial totals and are reported separately. The NCR is treated as a separate entity. However, these data distributed geographically, are presented in tables 4.8, 4.9 and 4.13.

Estimates of S&T activities by region may be misunderstood. For example, the financial data are identified with the region of the physical location of an S&T unit. It would be wrong to assume all of the expenditures of a unit are spent in the region of location. Supplies and equipment can be purchased from other regions or countries. Furthermore, in cases such as the NRC, labour moves freely between Ontario and Quebec so that even wages and salaries paid by a unit are partly spent outside the area of location.

Of the total federal funding for science and technology in 2002/03 and available for distribution regionally, 34% was allocated to Ontario and 26% to Quebec. These figures exclude funding for science and technology performed by the federal government in its own departments and agencies within the National Capital Region, which has been stable over the past few years.

In 2002/03, 43% of the total value of federal government R&D grants and contracts awarded to industry in the natural sciences was allocated to Ontario, compared with 34% to Quebec, and 9% to British Columbia.

Table 4.1 Federal expenditures on science and technology, by province and territories, 1995/96 to 2002/03

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01 ¹	2001/02 ^r	2002/03 ^p
in millions of dollars								
Newfoundland and Labrador	90	79	71	86	87	101	95	117
Prince Edward Island	17	17	14	17	20	29	26	24
Nova Scotia	199	199	175	200	197	220	225	246
New Brunswick	81	67	65	75	72	68	82	102
Quebec	792	824	787	788	833	1,017	1,381	1,243
Ontario	1,071	1,077	1,141	1,143	1,309	1,347	1,653	1,582
Manitoba	176	184	149	136	161	190	211	214
Saskatchewan	108	93	120	122	131	148	164	151
Alberta	252	248	247	254	301	327	477	396
British Columbia	383	347	373	446	528	479	526	582
Yukon, Northwest Territories and Nunavut	14	17	16	15	20	28	33	35
Canada (excluding NCR¹)	3,183	3,152	3,158	3,282	3,659	3,954	4,873	4,692
National Capital Region ¹	1,926	1,967	1,819	1,942	1,981	2,130	2,603	2,608
Canada (including NCR)	5,109	5,119	4,977	5,224	5,640	6,084	7,476	7,300

¹ Federal intramural expenditures only.

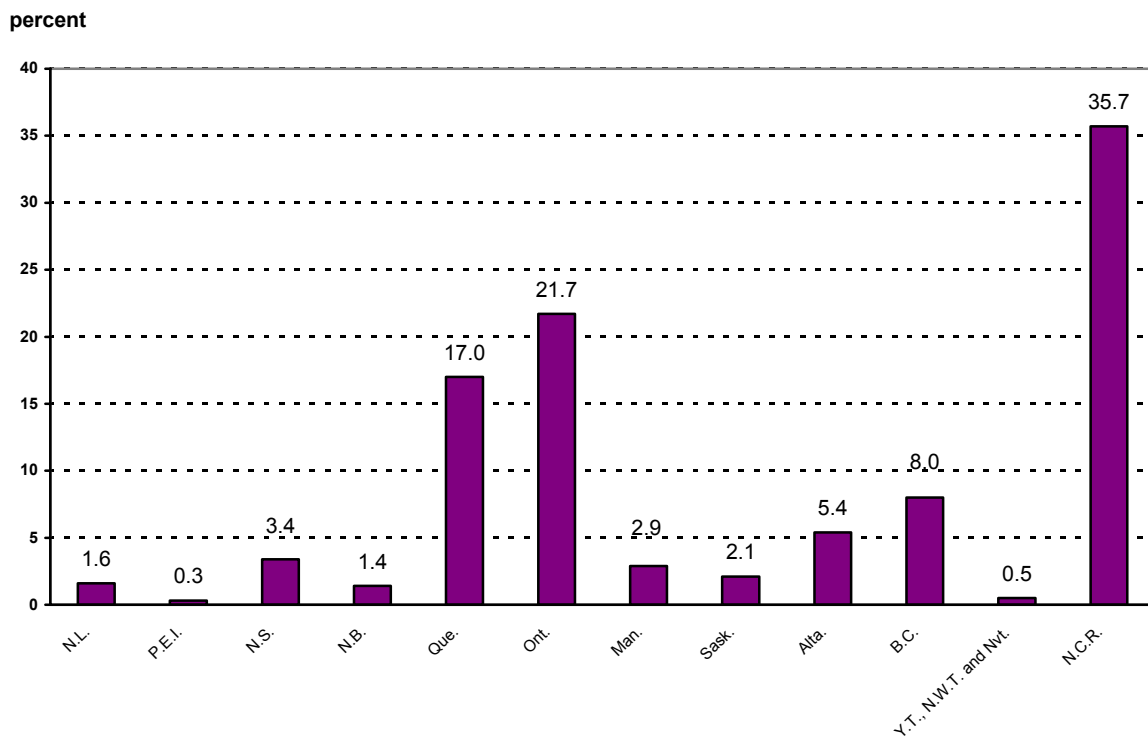
Chart 4.1 Federal expenditures on science and technology, by province and territories, 2002/03

Table 4.2 Federal expenditures on science and technology, by science, by province and territories and sector of performance, 2002/03						
	Federal government	Business enterprises	Higher education	Other ¹	Total	Total extramural ²
in millions of dollars						
Total sciences						
Newfoundland and Labrador	67	17	22	11	117	50
Prince Edward Island	14	5	3	1	24	9
Nova Scotia	162	26	46	13	246	85
New Brunswick	69	9	18	7	102	34
Quebec	525	269	424	25	1,243	718
Ontario	523	342	633	84	1,582	1,059
Manitoba	146	15	49	4	214	68
Saskatchewan	84	9	52	6	151	67
Alberta	172	22	174	28	396	224
British Columbia	228	74	241	38	582	353
Yukon, Northwest Territories and Nunavut	32	2	0	1	35	3
Canada (excluding NCR³)	2,022	790	1,662	218	4,692	2,670
National Capital Region ³	2,608	...	...	...	2,608	...
Canada (including NCR)	4,630	790	1,662	218	7,300	2,670
Natural sciences						
Newfoundland and Labrador	65	17	19	10	111	46
Prince Edward Island	13	5	3	1	22	9
Nova Scotia	148	26	42	12	228	80
New Brunswick	66	9	16	6	97	31
Quebec	505	268	376	18	1,167	662
Ontario	495	334	569	42	1,440	945
Manitoba	139	14	45	3	201	62
Saskatchewan	82	9	48	5	144	62
Alberta	165	22	160	25	372	207
British Columbia	219	73	221	34	547	328
Yukon, Northwest Territories and Nunavut	29	2	0	1	32	3
Canada (excluding NCR³)	1,926	779	1,499	157	4,361	2,435
National Capital Region ³	1,382	...	...	...	1,382	...
Canada (including NCR)	3,308	779	1,499	157	5,743	2,435
Social sciences						
Newfoundland and Labrador	2	0	3	1	6	4
Prince Edward Island	1	0	0	0	2	1
Nova Scotia	14	0	4	1	19	5
New Brunswick	3	0	2	1	6	3
Quebec	20	1	48	7	76	56
Ontario	28	8	63	42	141	113
Manitoba	7	1	4	1	13	6
Saskatchewan	2	0	4	1	7	5
Alberta	7	0	14	3	24	17
British Columbia	9	1	20	4	34	25
Yukon, Northwest Territories and Nunavut	3	0	0	0	3	0
Canada (excluding NCR³)	96	11	163	61	331	235
National Capital Region ³	1,226	...	...	...	1,226	...
Canada (including NCR)	1,322	11	163	61	1,557	235

1. Includes Canadian non-profit institutions, provincial and municipal governments and other.

2. Includes Canadian business enterprises, higher education and all other

3. Federal intramural expenditures only.

Table 4.3 Intramural expenditures of federal scientific establishments, by department or agency, activity and by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que. ²	Ont. ²	Man.	Sask.	Alta.	B.C.	Sub Total ¹	NCR Ont.	NCR Que.	Total Canada
in millions of dollars														
Department or agency														
S&T														
AECL	0	0	0	0	0	120	8	0	0	0	128	8	0	136
AGR	2	8	10	22	44	50	22	32	41	18	249	49	0	298
CSA	0	0	0	0	147	0	0	0	0	0	147	15	0	162
EC	3	0	15	6	87	185	30	23	25	43	422	33	53	508
F&O	42	4	66	14	38	31	32	2	3	82	321	27	0	348
HC	0	0	1	0	8	50	27	0	1	3	90	207	0	297
IND	0	0	0	0	0	0	0	0	0	0	0	67	35	102
NDEF	0	0	21	0	39	16	0	0	33	0	109	79	0	188
NRC	14	0	18	11	88	16	16	17	7	28	215	430	0	645
NRCan	2	0	12	12	41	24	1	1	45	37	188	261	0	449
PCA	2	0	7	3	9	17	7	2	3	4	60	0	39	99
STC	0	0	5	0	5	8	2	1	4	4	29	550	0	579
Other	2	2	7	1	19	6	1	6	10	9	64	550	205	819
Total	67	14	162	69	525	523	146	84	172	228	2,022	2,276	332	4,630
R&D														
AECL	0	0	0	0	0	120	8	0	0	0	128	8	0	136
AGR	2	6	8	20	39	42	20	27	36	15	215	31	0	246
CSA	0	0	0	0	144	0	0	0	0	0	144	10	0	154
EC	1	0	4	2	23	96	4	7	3	10	150	1	31	182
F&O	17	1	26	6	15	12	13	1	1	33	128	10	0	138
NDEF	0	0	20	0	37	16	0	0	16	0	89	72	0	161
NRC	11	0	14	11	73	12	11	14	3	21	170	400	0	570
NRCan	1	0	3	7	26	22	0	0	29	16	105	127	0	232
Other	0	1	1	0	13	4	16	3	4	4	46	308	17	371
Total	32	8	76	46	370	324	72	52	92	99	1,175	967	48	2,190

1. Includes Territories, Yukon and Nunavut.

2. Excluding the NCR.

Table 4.4 Intramural expenditures of federal scientific establishments, by activity, by province and territories, 1995/96 to 2002/03								
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
	in millions of dollars							
S&T								
Newfoundland and Labrador	55	55	48	58	56	63	61	67
Prince Edward Island	11	11	11	11	15	20	19	14
Nova Scotia	149	154	134	152	142	168	153	162
New Brunswick	50	49	45	50	48	42	46	69
Quebec	324	349	328	350	373	488	527	525
Ontario	385	474	445	398	482	516	500	523
Manitoba	127	138	107	92	110	128	148	146
Saskatchewan	72	61	92	84	82	87	90	84
Alberta	141	140	136	129	142	160	159	172
British Columbia	176	162	171	176	210	218	219	228
Yukon, Northwest Territories and Nunavut	11	15	15	14	17	23	30	32
<i>Sub-total</i>	<i>1,501</i>	<i>1,608</i>	<i>1,532</i>	<i>1,513</i>	<i>1,677</i>	<i>1,193</i>	<i>1,952</i>	<i>2,022</i>
NCR – Ontario	1,666	1,710	1,585	1,694	1,737	1,875	2,310	2,276
NCR – Quebec	260	257	234	248	244	255	293	332
Canada (including NCR)	3,427	3,575	3,351	3,455	3,658	4,043	4,555	4,630
R&D								
Newfoundland and Labrador	27	25	23	26	25	30	27	32
Prince Edward Island	9	10	10	10	12	16	16	8
Nova Scotia	77	79	71	77	72	88	70	76
New Brunswick	29	32	29	31	32	27	26	46
Quebec	218	226	211	226	250	349	372	370
Ontario	259	348	302	276	309	314	328	324
Manitoba	71	77	59	49	58	68	77	72
Saskatchewan	52	47	74	54	60	62	63	52
Alberta	98	94	96	94	108	116	98	92
British Columbia	81	77	83	85	106	111	97	99
Yukon, Northwest Territories and Nunavut	1	6	5	4	7	9	3	4
<i>Sub-total</i>	<i>922</i>	<i>1,021</i>	<i>963</i>	<i>932</i>	<i>1,039</i>	<i>1,191</i>	<i>1,177</i>	<i>1,175</i>
NCR – Ontario	775	750	738	781	787	850	886	967
NCR – Quebec	30	21	19	30	33	39	40	48
Canada (including NCR)	1,727	1,792	1,720	1,743	1,859	2,080	2,103	2,190

Table 4.5 Federal government grants and contracts to industry for R&D in the natural sciences, by province and territories, 1995/96 to 2002/03

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
	in millions of dollars							
Newfoundland and Labrador	7	6	6	9	10	11	8	17
Prince Edward Island	2	2	2	4	2	5	3	5
Nova Scotia	15	15	16	10	10	12	20	23
New Brunswick	14	3	8	9	8	5	7	9
Quebec	211	209	226	176	158	186	252	239
Ontario	282	213	327	312	267	235	421	298
Manitoba	17	11	11	10	12	11	13	13
Saskatchewan	12	6	6	8	8	8	9	8
Alberta	23	20	24	21	25	21	26	21
British Columbia	47	48	58	117	142	49	54	64
Yukon, Northwest Territories and Nunavut	0	0	0	0	0	1	1	0
Canada	631	533	684	676	642	544	814	697

Table 4.6 Federal government grants and contracts to industry for R&D in the natural sciences, by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt.	Canada
in millions of dollars												
Department / program												
A. Grants												
ACOA	7.3	2.4	9.9	5.0	0.5	0.3	0	0	0	0	0	25.4
CED (QUÉ)	0	0	0	0	20.5	0	0	0	0	0	0	20.5
IND:												
TPC ¹	5.1	0.6	0.2	0	132.1	123.8	1.5	0	2.1	32.0	0	297.4
Other	0	0	0	0	0.5	23.0	0	0	0	0	0	23.5
Total	5.1	0.6	0.2	0	132.6	146.8	1.5	0	2.1	32.0	0	320.9
NRC:												
IRAP ²	3.4	1.8	3.8	3.0	15.9	25.7	2.2	1.8	6.0	11.9	0.3	75.8
Total	3.4	1.8	3.8	3.0	15.9	25.7	2.2	1.8	6.0	11.9	0.3	75.8
WEDC	0	0	0	0	0	0	0.3	0.8	2.4	3.7	0	7.2
Other	0.8	0.1	0.1	0	12.9	35.1	0.1	0.2	5.4	8.2	0	62.9
Total	16.6	4.9	14.0	8.0	182.4	207.9	4.1	2.8	15.9	55.8	0.3	512.7
% of grants	3.2	0.9	2.7	1.6	35.6	40.6	0.8	0.5	3.1	10.9	0.1	100.0
B. Contracts												
CSA	0	0	0.1	0	24.8	45.6	8.8	5.4	0.4	3.0	0	88.1
NDEF	0	0	8.4	0	24.3	29.7	0.4	0.1	3.3	3.6	0	69.8
NRCan	0	0.2	0	0.3	0.6	1.4	0	0	0.1	0.4	0	3.0
Other	0.4	0	0.2	0.2	7.1	13.2	0.3	0	1.3	0.8	0	23.5
Total	0.4	0.2	8.7	0.5	56.8	89.9	9.5	5.5	5.1	7.8	0	184.4
% of contracts	0.2	0.1	4.7	0.3	30.8	48.8	5.1	3.0	2.8	4.2	0	100.0
Total, grants and contracts	17.0	5.1	22.7	8.5	239.2	297.8	13.6	8.3	21.0	63.6	0.3	697.1
% of total	2.4	0.7	3.3	1.2	34.3	42.7	2.0	1.2	3.0	9.1	0.1	100.0

1. *Technology Partnerships Canada*2. *Industrial Research Assistance Program*

Table 4.7 Federal government grants and contracts to universities for R&D, by province and territories, 1995/96 to 2002/03

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 ^f	2002/03 ^f
	in millions of dollars							
Newfoundland and Labrador	9	8	9	10	15	18	19	20
Prince Edward Island	1	1	1	1	2	2	2	3
Nova Scotia	23	20	20	23	36	31	43	42
New Brunswick	8	7	7	11	10	11	23	16
Quebec	206	205	185	209	252	291	421	399
Ontario	276	257	246	292	360	456	561	591
Manitoba	23	21	20	23	28	34	40	46
Saskatchewan	17	19	14	22	27	41	55	50
Alberta	73	74	73	85	104	114	164	161
British Columbia	131	120	120	131	149	152	202	228
Yukon, Northwest Territories and Nunavut	0	0	0	0	0	0	0	0
Canada	768	733	695	807	983	1,150	1,530	1,556

Table 4.8 Federal intramural expenditures on science and technology for the National Capital Region, 1995/96 to 2002/03								
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
in millions of dollars								
Activity and science								
Total National Capital Region								
Research and development								
SSH	55	67	68	76	85	84	90	115
NSE	750	704	689	735	736	805	836	900
Total	805	771	757	811	821	889	926	1,015
Related scientific activities								
SSH	771	874	772	821	838	957	1,168	1,111
NSE	350	322	290	310	322	284	509	482
Total	1,121	1,196	1,062	1,131	1,160	1,241	1,677	1,593
Total science and technology								
SSH	826	941	840	897	923	1,041	1,258	1,226
NSE	1,100	1,026	979	1,045	1,058	1,089	1,345	1,382
Total	1,926	1,967	1,819	1,942	1,981	2,130	2,603	2,608
National Capital Region (Ontario)								
Research and development								
SSH	50	61	63	70	79	77	82	105
NSE	726	689	675	711	709	773	803	862
Total	776	750	738	781	788	850	885	967
Related scientific activities								
SSH	618	736	646	700	722	825	1,020	925
NSE	272	224	201	213	228	200	405	384
Total	890	960	847	913	950	1,025	1,425	1,309
Total science and technology								
SSH	668	797	709	770	801	902	1,102	1,030
NSE	998	913	876	924	937	973	1,208	1,246
Total	1,666	1,710	1,585	1,694	1,737	1,875	2,310	2,276
National Capital Region (Quebec)								
Research and development								
SSH	6	6	5	6	6	7	8	10
NSE	24	15	14	24	27	32	33	38
Total	30	21	19	30	33	39	41	48
Related scientific activities								
SSH	152	138	126	121	116	132	148	186
NSE	78	98	89	97	94	84	104	98
Total	230	236	215	218	210	216	252	284
Total science and technology								
SSH	158	144	131	127	122	139	156	196
NSE	102	113	103	121	121	116	137	136
Total	260	257	234	248	243	255	293	332

Table 4.9 Federal expenditures on science and technology for the National Capital Region, 2002/03					
	Federal government	Business enterprises	Higher education	Other ¹	Total
in millions of dollars					
Activity and science					
National Capital Region (Ontario)					
Research and development					
SSH	105	2	9	18	134
NSE	862	127	76	4	1,069
Total	967	129	85	22	1,203
Related scientific activities					
SSH	925	4	1	7	937
NSE	384	14	3	4	405
Total	1,309	18	4	11	1,342
Total science and technology					
SSH	1,030	6	10	25	1,071
NSE	1,246	141	79	8	1,474
Total	2,276	147	89	33	2,545
National Capital Region (Quebec)					
Research and development					
SSH	10	0	0	0	10
NSE	38	1	1	0	40
Total	48	1	1	0	50
Related scientific activities					
SSH	186	0	0	0	186
NSE	98	1	0	0	99
Total	284	1	0	0	285
Total science and technology					
SSH	196	0	0	0	196
NSE	136	2	1	0	139
Total	332	2	1	0	335

1. Includes Canadian non-profit institutions, provincial and municipal governments and other Canadian performers.

Table 4.10 Personnel of federal establishments performing S&T activities, by department or agency and by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que. ²	Ont. ²	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt.	Sub- Total	NCR	Total
	person-years ¹													
Department or agency														
ACOA	4	2	5	13	0	0	0	0	0	0	0	24	0	24
AECL	0	0	0	0	0	1,075	76	0	0	0	0	1,151	13	1,164
AGR	18	65	83	65	336	403	168	274	276	151	0	1,839	454	2,293
BC	0	0	3	0	3	7	0	0	2	2	0	17	244	261
CRA	7	0	0	0	0	11	14	0	0	11	0	43	107	150
CED (QUÉ)	0	0	0	0	37	0	0	0	0	0	0	37	0	37
CFIA	16	7	39	10	50	19	11	70	55	56	0	333	141	474
CIDA	0	0	0	0	0	0	0	0	0	0	0	0	247	247
CIHR	0	0	0	0	0	0	0	0	0	0	0	0	227	227
CMC	0	0	0	0	0	0	0	0	0	0	0	0	425	425
CMHC	0	0	6	0	12	22	0	0	13	12	0	65	59	124
CMN	0	0	0	0	0	0	0	0	0	0	0	0	169	169
CNSC	0	0	0	0	0	0	0	0	0	0	0	0	7	7
COL	0	0	0	0	0	0	0	0	0	0	0	0	19	19
CSA	0	0	0	0	464	0	0	0	0	0	0	464	57	521
CSTM	0	0	0	0	0	0	0	0	0	0	0	0	273	273
EC	27	2	128	48	507	1,063	177	149	168	303	54	2,626	531	3,157
F&O	295	29	446	100	265	203	213	11	22	547	45	2,176	195	2,371
FAC	0	0	0	0	0	0	0	0	0	0	0	0	60	60
FIN	0	0	0	0	0	0	0	0	0	0	0	0	283	283
GC	0	0	0	0	0	0	0	0	0	0	0	0	30	30
HC	0	0	9	0	88	475	169	0	6	36	0	783	1,724	2,507
HRDC	0	0	0	0	0	0	0	0	0	0	0	0	513	513
IAND	0	0	0	0	0	0	0	0	0	0	0	0	7	7
IDRC	0	0	0	0	0	0	0	0	0	0	0	0	153	153
IND	0	0	1	0	1	0	0	0	0	0	0	2	1,059	1,061
JUS	0	0	0	0	0	0	0	0	0	0	0	0	69	69
NA	0	0	0	0	0	0	0	0	0	0	0	0	405	405
NDEF	0	0	217	0	395	171	4	0	392	3	0	1,182	646	1,828
NEB	0	0	0	0	0	0	0	0	10	0	0	10	0	10
NGC	0	0	0	0	0	0	0	0	0	0	0	0	250	250
NL	0	0	0	0	0	0	0	0	0	0	0	0	467	467
NRC	100	2	131	62	493	138	142	132	22	188	0	1,410	2,480	3,890
NRCan	21	0	91	97	308	180	2	6	318	248	39	1,310	2,222	3,532
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	280	280
PCA	25	5	67	16	55	125	73	18	36	42	63	525	398	923
PW & GS	0	0	0	0	0	0	0	0	0	0	0	0	53	53
SGEN	0	0	0	0	0	0	0	0	0	0	0	0	35	35
SSHRC	0	0	0	0	0	0	0	0	0	0	0	0	158	158
STC	0	0	58	0	63	92	21	8	50	47	0	339	5,625	5,964
TB	0	0	0	0	0	0	0	0	0	0	0	0	355	355
TC	0	0	0	0	23	0	0	0	0	0	0	23	49	72
WEDC	0	0	0	0	0	0	0	0	5	0	0	5	0	5
Other	0	0	0	1	6	0	0	0	0	0	0	7	265	272
Total	513	112	1,284	412	3,106	3,984	1,070	668	1,375	1,646	201	14,371	20,754	35,125

1. Including Administration of Extramural Programs Personnel.

2. Excluding the National Capital Region.

Table 4.11 Scientific and professional personnel of federal establishments performing S&T activities, by department or agency and by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que. ²	Ont. ²	Man	Sask	Alta	B.C.	Y.T. N.W.T. Nvt.	Sub- Total	NCR	Total
	person-years ¹													
Department or agency														
AECL	0	0	0	0	0	613	39	0	0	0	0	652	4	656
AGR	7	22	25	20	100	122	49	85	83	47	0	560	168	728
CRA	7	0	0	0	0	11	14	0	0	11	0	43	107	150
CFIA	4	2	14	3	18	10	6	24	14	20	0	115	47	162
CMC	0	0	0	0	0	0	0	0	0	0	0	0	78	78
CMHC	0	0	4	0	8	14	0	0	9	9	0	44	45	89
CMN	0	0	0	0	0	0	0	0	0	0	0	0	97	97
CSA	0	0	0	0	212	0	0	0	0	0	0	212	29	241
CSTM	0	0	0	0	0	0	0	0	0	0	0	0	15	15
EC	21	1	100	37	229	485	86	73	83	129	26	1,270	274	1,544
F&O	110	11	172	39	110	77	81	4	9	212	17	842	89	931
FIN	0	0	0	0	0	0	0	0	0	0	0	0	221	221
HC	0	0	7	0	52	318	57	0	1	19	0	454	1,078	1,532
HRDC	0	0	0	0	0	0	0	0	0	0	0	0	336	336
IND	0	0	0	0	1	0	0	0	0	0	0	1	550	551
NA	0	0	0	0	0	0	0	0	0	0	0	0	110	110
NDEF	0	0	94	0	170	60	4	0	128	3	0	459	430	889
NGC	0	0	0	0	0	0	0	0	0	0	0	0	38	38
NL	0	0	0	0	0	0	0	0	0	0	0	0	216	216
NRC	34	2	37	6	203	22	54	42	16	102	0	518	962	1,480
NRCan	12	0	51	51	186	78	1	3	171	166	18	737	1,173	1,910
PCA	12	2	17	7	14	33	25	7	19	17	26	179	98	277
STC	0	0	0	0	0	0	0	0	0	0	0	0	1,394	1,394
Other	0	0	2	0	21	5	0	0	11	2	0	41	795	836
Total	207	40	523	163	1,324	1,848	416	238	544	737	87	6,127	8,354	14,481

1. Including Administration of Extramural Programs Personnel.

2. Excluding the National Capital Region.

Table 4.12 Personnel of federal establishments performing R&D activities, by department or agency and by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que. ²	Ont. ²	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt.	Sub- Total	NCR	Total
	person-years ¹													
Department or agency														
AECL	0	0	0	0	0	1,075	76	0	0	0	0	1,151	13	1,164
AGR	13	40	68	53	295	341	156	218	238	121	0	1,543	267	1,810
CSA	0	0	0	0	441	0	0	0	0	0	0	441	23	464
EC	2	0	8	3	169	425	16	53	14	49	0	739	146	885
F&O	106	9	168	35	97	79	84	5	9	212	17	821	70	891
HC	0	0	1	0	23	37	96	0	6	15	0	178	521	699
IDRC	0	0	0	0	0	0	0	0	0	0	0	0	114	114
IND	0	0	0	0	0	0	0	0	0	0	0	0	479	479
NDEF	0	0	203	0	392	151	4	0	158	3	0	911	573	1,484
NRC	76	0	95	56	372	116	118	116	0	126	0	1,075	1,648	2,723
NRCan	13	0	22	56	203	137	0	3	202	132	1	769	1,076	1,845
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	246	246
STC	0	0	0	0	0	0	0	0	0	0	0	0	203	203
Other	4	8	6	13	69	1	6	31	16	12	0	166	792	958
Total	214	57	571	216	2,061	2,362	556	426	643	670	18	7,794	6,171	13,965

1. Including Administration of Extramural R&D Programs Personnel.

2. Excluding the National Capital Region.

Table 4.13 Personnel of federal establishments performing S&T activities, by department or agency in the National Capital Region, 2002/03

	NCR - Ontario			NCR - Quebec			NCR - Total		
	R&D	RSA	Total	R&D	RSA	Total	R&D	RSA	Total
	person-years ¹								
Department or agency									
AGR	267	187	454	0	0	0	267	187	454
BC	82	162	244	0	0	0	82	162	244
CRA	0	107	107	0	0	0	0	107	107
CFIA	42	99	141	0	0	0	42	99	141
CIDA	0	0	0	29	218	247	29	218	247
CIHR	222	5	227	0	0	0	222	5	227
CMC	2	41	43	50	332	382	52	373	425
CMN	0	34	34	23	112	135	23	146	169
CSTM	0	273	273	0	0	0	0	273	273
EC	11	162	173	135	223	358	146	385	531
F&O	70	125	195	0	0	0	70	125	195
FIN	0	283	283	0	0	0	0	283	283
HC	521	1,201	1,722	0	2	2	521	1,203	1,724
HRDC	0	14	14	7	492	499	7	506	513
IDRC	114	39	153	0	0	0	114	39	153
IND	469	188	657	10	392	402	479	580	1,059
NA	0	328	328	0	77	77	0	405	405
NDEF	573	73	646	0	0	0	573	73	646
NGC	44	206	250	0	0	0	44	206	250
NL	0	175	175	0	292	292	0	467	467
NRC	1,648	832	2,480	0	0	0	1,648	832	2,480
NRCan	1,076	1,146	2,222	0	0	0	1,076	1,146	2,222
NSERC	246	34	280	0	0	0	246	34	280
PCA	0	0	0	0	398	398	0	398	398
SSHRC	90	68	158	0	0	0	90	68	158
STC	203	5,422	5,625	0	0	0	203	5,422	5,625
TB	0	355	355	0	0	0	0	355	355
Other	210	398	608	27	88	115	237	486	723
Total	5,890	11,957	17,847	281	2,626	2,907	6,171	14,583	20,754

1. Including Administration of Extramural R&D Programs Personnel.

Table 4.14 Scientific and professional personnel of federal establishments performing R&D activities, by department or agency and by province and territories, 2002/03

	N.L.	P.E.I.	N.S.	N.B.	Que. ²	Ont. ²	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt.	Sub- Total	NCR	Total
	person-years ¹													
Department or agency														
AECL	0	0	0	0	0	613	39	0	0	0	0	652	4	656
AGR	4	12	20	15	84	98	44	63	68	35	0	443	66	509
CSA	0	0	0	0	210	0	0	0	0	0	0	210	19	229
EC	2	0	8	3	92	247	16	39	13	26	0	446	93	539
F&O	40	3	63	13	36	30	32	2	3	79	7	308	32	340
HC	0	0	1	0	18	19	34	0	1	15	0	88	221	309
IND	0	0	0	0	0	0	0	0	0	0	0	0	245	245
NDEF	0	0	87	0	168	50	4	0	51	3	0	363	402	765
NRC	27	0	26	0	158	0	54	42	0	87	0	394	642	1,036
NRCan	6	0	12	33	123	72	0	2	112	85	1	446	581	1,027
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	12	12
STC	0	0	0	0	0	0	0	0	0	0	0	0	131	131
Other	2	2	1	0	28	0	2	13	7	4	0	57	335	392
Total	79	17	218	64	917	1,129	225	161	255	334	8	3,407	2,783	6,190

1. Including Administration of Extramural R&D Programs Personnel.

2. Excluding the National Capital Region.

5. Expenditures on S&T by socio-economic objectives

Federal government expenditures on S&T by 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 at the highest level of aggregation. In many cases, projects have multiple objectives and a department assigned its expenditures consistent with the stated objectives of the department.

The objectives are based on the nomenclature for the *analysis and comparison of scientific programs and budgets (NABS)* produced by the *statistical office of the European communities (Eurostat)*.

The objectives of government funding of R&D have long been of interest to policy makers. *Eurostat* for many years had a sub-committee on R&D statistics which compiled data on government funding of R&D. The system of classification used was the *NABS* which was developed in 1969 and first revised in 1975.

Data by socio-economic objectives were previously collected as part of the main estimates science addendum exercise using *OECD* classifications.

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, 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.

Pollution, protection and conservation of the environment

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, micro-organisms) 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.

Public 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 paediatric and geriatric research.

Production, distribution and rational utilization of energy

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

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

Industrial production and technology

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 analyzed 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, 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

Scientific activities and development for military purposes. It also includes basic research and nuclear and space research financed by Ministry of Defence. Civil scientific activities financed by ministry of Defence, for example, in the fields of meteorology, telecommunications and health, should be classified in the relevant objectives.

Table 5.1 S&T expenditures by socio-economic objectives, 2000/01 to 2002/03						
Socio-economic objectives	2000/01		2001/02 ^r		2002/03 ^r	
	Intramural ¹	Extramural	Intramural ¹	Extramural	Intramural ¹	Extramural
	in millions of dollars					
Exploration and exploitation of the earth	413	76	454	90	466	83
Infrastructure and general planning of land use:						
Transport	46	21	120	27	112	28
Telecommunication	30	15	48	23	42	25
Other	148	27	146	28	162	32
Pollution, protection and conservation of the environment	329	158	337	195	360	188
Public health	241	549	288	739	344	906
Production, distribution and rational utilization of energy	189	67	252	121	217	80
Agricultural production and technology:						
Agriculture	378	76	427	82	415	98
Fishing	131	30	124	19	141	23
Forestry	91	30	90	29	91	44
Industrial production and technology	225	542	242	894	246	685
Social structures and relationships	897	189	1,067	203	997	241
Exploration and exploitation of space	198	159	190	199	192	184
Non-oriented research	203	216	249	393	270	242
Other civil research	24	19	18	17	17	3
Defence	169	140	137	173	177	169
Other	16	350	18	382	22	353
Total S&T expenditures	3,728	2,664	4,207	3,614	4,271	3,384

1. Non-program (indirect costs) are excluded

Table 5.2 R&D expenditures by socio-economic objectives, 2000/01 to 2002/03						
Socio-economic objectives	2000/01		2001/02 ^r		2002/03 ^r	
	Intramural ¹	Extramural	Intramural ¹	Extramural	Intramural ¹	Extramural
	in millions of dollars					
Exploration and exploitation of the earth	207	46	125	69	141	59
Infrastructure and general planning of land use:						
Transport	37	20	71	24	65	25
Telecommunication	28	15	44	23	37	24
Other	48	20	30	25	39	28
Pollution, protection and conservation of the environment	143	112	142	148	174	141
Public health	116	519	152	709	186	866
Production, distribution and rational utilization of energy	187	64	248	117	214	75
Agricultural production and technology:						
Agriculture	333	70	345	75	287	90
Fishing	51	14	47	15	55	16
Forestry	83	27	75	27	74	41
Industrial production and technology	165	518	164	741	189	657
Social structures and relationships	53	106	47	130	61	149
Exploration and exploitation of space	187	154	175	193	180	179
Non-oriented research	150	188	181	365	202	213
Other civil research	16	17	15	17	14	2
Defence	150	119	134	142	152	100
Other	3	62	5	67	5	72
Total R&D expenditures	1,957	2,070	2,000	2,887	2,075	2,737

1. Non-program (indirect costs) are excluded

Table 5.3 S&T expenditures by socio-economic objectives and activity, 2002/03									
Socio-economic objectives	Intramural ¹			Extramural			Total		
	R&D	RSA	S&T	R&D	RSA	S&T	R&D	RSA	S&T
	in millions of dollars								
Exploration and exploitation of the earth	141	325	466	59	24	83	200	349	549
Infrastructure and general planning of land use:									
Transport	65	47	112	25	3	28	90	50	140
Telecommunication	37	5	42	24	1	25	61	6	67
Other	39	123	162	28	4	32	67	127	194
Pollution, protection and conservation of the environment	174	186	360	141	47	188	315	233	548
Public health	186	158	344	866	40	906	1,052	198	1,250
Production, distribution and rational utilization of energy	214	3	217	75	5	80	289	8	297
Agricultural production and technology:									
Agriculture	287	128	415	90	8	98	377	136	513
Fishing	55	86	141	16	7	23	71	93	164
Forestry	74	17	91	41	3	44	115	20	135
Industrial production and technology	189	57	246	657	28	685	846	85	931
Social structures and relationships	61	936	997	149	92	241	210	1,028	1,238
Exploration and exploitation of space	180	12	192	179	5	184	359	17	376
Non-oriented research	202	68	270	213	29	242	415	97	512
Other civil research	14	3	17	2	1	3	16	4	20
Defence	152	25	177	100	69	169	252	94	346
Other	5	17	22	72	281	353	77	298	375
Total expenditures	2,075	2,196	4,271	2,737	647	3,384	4,812	2,843	7,655

1. Non-program (indirect costs) are excluded

Chart 5.1 S&T and R&D expenditure percentages by socio-economic objectives, 2002/03

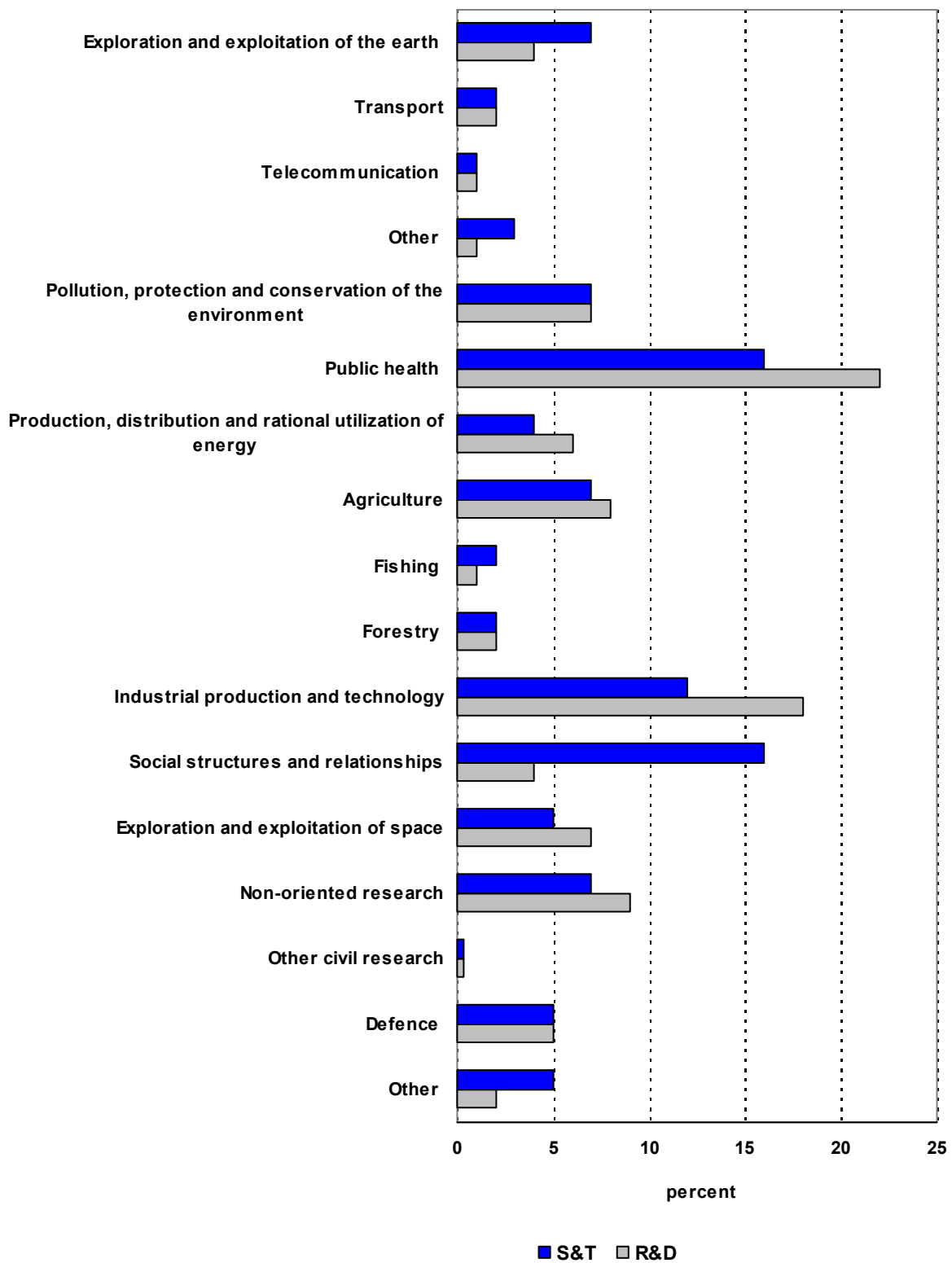


Table 5.4 S&T expenditure percentages by socio-economic objectives and activity, 2002/03									
Socio-economic objectives	Intramural ¹			Extramural			Total		
	R&D	RSA	S&T	R&D	RSA	S&T	R&D	RSA	S&T
	percent								
Exploration and exploitation of the earth	7	15	11	2	4	2	4	12	7
Infrastructure and general planning of land use:									
Transport	3	2	3	1	0	1	2	2	2
Telecommunication	2	0	1	1	0	1	1	0	1
Other	2	6	4	1	1	1	1	4	3
Pollution, protection and conservation of the environment	8	8	8	5	7	6	7	8	7
Public health	9	7	8	32	6	27	22	7	16
Production, distribution and rational utilization of energy	10	0	5	3	1	2	6	0	4
Agricultural production and technology:									
Agriculture	14	6	10	3	1	3	8	5	7
Fishing	3	4	3	1	1	1	1	3	2
Forestry	4	1	2	1	0	1	2	1	2
Industrial production and technology	9	3	6	24	4	20	18	3	12
Social structures and relationships	3	43	23	5	14	7	4	36	16
Exploration and exploitation of space	9	1	4	7	1	5	7	1	5
Non-oriented research	10	3	6	8	4	7	9	3	7
Other civil research	1	0	0	0	0	0	0	0	0
Defence	7	1	4	4	11	5	5	3	5
Other	0	1	1	3	43	10	2	10	5
Total expenditures	100	100	100	100	100	100	100	100	100

1. Non-program (indirect costs) are excluded

Table 5.5 S&T expenditures by socio-economic objectives and major department and agency, 2002/03

Socio-economic objectives	AGR	CIDA	CIHR	EC	NDEF	NRC	NRCan	NSERC	STC	Others	Total	%
in millions of dollars												
Exploration and exploitation of the earth	0	0	0	192	0	5	150	30	0	172	549	7
Infrastructure and general planning of land use:												
Transport	0	0	0	0	0	50	47	10	4	29	140	2
Telecommunication	0	0	0	0	0	22	0	0	0	45	67	1
Other	0	0	0	0	0	42	26	22	0	104	194	2
Pollution, protection and conservation of the environment	0	0	0	305	0	42	0	100	0	101	548	7
Public health	0	0	627	0	0	87	3	79	9	445	1,250	16
Production, distribution and rational utilization of energy	0	0	0	0	0	4	97	35	0	161	297	4
Agricultural production and technology:												
Agriculture	307	0	0	0	0	36	0	48	10	112	513	7
Fishing	0	0	0	0	0	2	0	12	0	150	164	2
Forestry	0	0	0	0	0	4	115	9	0	7	135	2
Industrial production and technology	0	0	0	3	0	190	45	205	0	488	931	12
Social structures and relationships	0	0	0	0	0	0	0	3	510	725	1,238	16
Exploration and exploitation of space	0	0	0	0	0	43	0	15	0	318	376	5
Non-oriented research	0	0	0	0	0	236	1	80	0	195	512	7
Other civil research	0	0	0	0	1	15	0	0	0	4	20	0
Defence	0	0	0	0	346	0	0	0	0	0	346	5
Other	0	349	0	0	0	0	0	0	0	26	375	5
Total S&T expenditures¹	307	349	627	500	347	778	484	648	533	3,082	7,655	100

1. Non-program (indirect costs) are excluded

Table 5.6 S&T intramural expenditures by socio-economic objectives and major department and agency 2002/03												
Socio-economic objectives	AECL	AGR	EC	F&O	HC	NDEF	NRC	NRCan	STC	Others	Total	%
in millions of dollars												
Exploration and exploitation of the earth	0	0	174	139	0	0	5	144	0	4	466	11
Infrastructure and general planning of land use:												
Transport	0	0	0	0	0	0	46	47	4	15	112	3
Telecommunication	0	0	0	0	0	0	12	0	0	30	42	1
Other	0	0	0	0	0	0	42	26	0	94	162	4
Pollution, protection and conservation of the environment	0	0	259	51	0	0	36	0	0	14	360	8
Public health	0	0	0	0	195	0	80	3	9	57	344	8
Production, distribution and rational utilization of energy	136	0	0	0	0	0	2	74	0	5	217	5
Agricultural production and technology:												
Agriculture	0	285	0	0	32	0	30	0	10	58	415	10
Fishing	0	0	0	140	0	0	0	0	0	1	141	3
Forestry	0	0	0	0	0	0	3	86	0	2	91	2
Industrial production and technology	0	0	2	0	1	0	137	42	0	64	246	6
Social structures and relationships	0	0	0	0	0	0	0	0	509	488	997	23
Exploration and exploitation of space	0	0	0	0	0	0	32	0	0	160	192	5
Non-oriented research	0	0	0	0	0	0	191	0	0	79	270	6
Other civil research	0	0	0	0	0	0	14	0	0	3	17	0
Defence	0	0	0	0	0	177	0	0	0	0	177	4
Other	0	0	0	0	0	0	0	0	0	22	22	1
Total S&T expenditures¹	136	285	435	330	228	177	630	422	532	1,096	4,271	100

1. Non-program (indirect costs) are excluded

Table 5.7 S&T extramural expenditures by socio-economic objectives and major department and agency, 2002/03											
Socio-economic objectives	CIDA	CIHR	CSA	IND	NDEF	NRC	NSERC	SSHRC	Others	Total	%
in millions of dollars											
Exploration and exploitation of the earth	0	0	0	0	0	0	28	0	55	83	3
Infrastructure and general planning of land use:											
Transport	0	0	0	0	0	4	9	2	13	28	1
Telecommunication	0	0	0	0	0	10	0	0	15	25	1
Other	0	0	0	0	0	0	20	0	12	32	1
Pollution, protection and conservation of the environment	0	0	0	0	0	6	95	6	81	188	6
Public health	0	588	0	0	0	7	75	11	225	906	27
Production, distribution and rational utilization of energy	0	0	0	0	0	3	34	0	43	80	2
Agricultural production and technology:											
Agriculture	0	0	0	0	0	6	45	1	46	98	3
Fishing	0	0	0	0	0	2	11	1	9	23	1
Forestry	0	0	0	0	0	1	9	2	32	44	1
Industrial production and technology	0	0	0	322	0	53	194	11	105	685	20
Social structures and relationships	0	0	0	0	0	0	3	120	118	241	7
Exploration and exploitation of space	0	0	158	0	0	11	14	0	1	184	5
Non-oriented research	0	0	0	0	0	44	76	13	109	242	7
Other civil research	0	0	0	0	1	0	0	0	2	3	0
Defence	0	0	0	0	169	0	0	0	0	169	5
Other	331	0	0	0	0	0	0	0	22	353	10
Total S&T expenditures	331	588	158	322	170	147	613	167	888	3,384	100

Socio-economic objectives	AGR	CIHR	CSA	EC	IND	NDEF	NRC	NRCan	NSERC	Others	Total	%
in millions of dollars												
Exploration and exploitation of the earth	0	0	0	54	0	0	4	31	26	85	200	4
Infrastructure and general planning of land use:												
Transport	0	0	0	0	0	0	45	11	9	25	90	2
Telecommunication	0	0	0	0	23	0	21	0	0	17	61	1
Other	0	0	0	0	0	0	37	0	19	11	67	1
Pollution, protection and conservation of the environment	0	0	0	128	0	0	38	0	88	61	315	7
Public health	0	620	0	0	0	0	78	2	70	282	1,052	22
Production, distribution and rational utilization of energy	0	0	0	0	0	0	4	97	31	157	289	6
Agricultural production and technology:												
Agriculture	257	0	0	0	0	0	33	0	42	45	377	8
Fishing	0	0	0	0	0	0	2	0	10	59	71	2
Forestry	0	0	0	0	0	0	4	96	8	7	115	2
Industrial production and technology	0	0	0	2	341	0	174	34	180	115	846	18
Social structures and relationships	0	0	0	0	1	0	0	0	3	206	210	4
Exploration and exploitation of space	0	0	305	0	0	0	39	0	13	2	359	7
Non-oriented research	0	0	0	0	0	0	213	1	70	131	415	9
Other civil research	0	0	0	0	0	1	13	0	0	2	16	0
Defence	0	0	0	0	0	252	0	0	0	0	252	5
Other	0	0	0	0	0	0	0	0	0	77	77	2
Total R&D expenditures¹	257	620	305	184	365	253	705	272	569	1,282	4,812	100

1. Non-program (indirect costs) are excluded

Table 5.9 R&D intramural expenditures by socio-economic objectives and major department and agency, 2002/03

Socio-economic objectives	AECL	AGR	CSA	EC	F&O	NDEF	NRC	NRCan	Others	Total	%
in millions of dollars											
Exploration and exploitation of the earth	0	0	0	46	56	0	4	30	5	141	7
Infrastructure and general planning of land use:											
Transport	0	0	0	0	0	0	41	0	13	54	3
Telecommunication	0	0	0	0	0	0	10	11	27	48	2
Other	0	0	0	0	0	0	37	0	2	39	2
Pollution, protection and conservation of the environment	0	0	0	112	21	0	32	0	9	174	8
Public health	0	0	0	0	0	0	70	2	114	186	9
Production, distribution and rational utilization of energy	136	0	0	0	0	0	2	73	3	214	10
Agricultural production and technology:											
Agriculture	0	236	0	0	0	0	27	0	24	287	14
Fishing	0	0	0	0	54	0	0	0	1	55	3
Forestry	0	0	0	0	0	0	3	69	2	74	3
Industrial production and technology	0	0	0	0	0	0	121	34	34	189	9
Social structures and relationships	0	0	0	0	0	0	0	0	61	61	3
Exploration and exploitation of space	0	0	150	0	0	0	29	0	1	180	9
Non-oriented research	0	0	0	0	0	0	169	0	33	202	10
Other civil research	0	0	0	0	0	0	12	0	2	14	1
Defence	0	0	0	0	0	152	0	0	0	152	7
Other	0	0	0	0	0	0	0	0	5	5	0
Total R&D expenditures¹	136	236	150	158	131	152	557	219	336	2,075	100

1. Non-program (indirect costs) are excluded

Table 5.10 R&D extramural expenditures by socio-economic objectives and major department and agency, 2002/03											
Socio-economic objectives	CFI	CIHR	CSA	IND	NDEF	NRC	NSERC	SSHRC	Others	Total	%
in millions of dollars											
Exploration and exploitation of the earth	21	0	0	0	0	0	25	0	13	59	2
Infrastructure and general planning of land use:											
Transport	0	0	0	0	0	4	8	2	10	25	1
Telecommunication	1	0	0	0	0	10	0	0	5	24	1
Other	8	0	0	0	0	0	18	0	2	28	1
Pollution, protection and conservation of the environment	20	0	0	0	0	6	83	5	27	141	5
Public health	135	583	0	0	0	7	66	9	66	866	32
Production, distribution and rational utilization of energy	7	0	0	0	0	3	29	0	36	75	3
Agricultural production and technology:											
Agriculture	8	0	0	0	0	6	40	1	35	90	3
Fishing	1	0	0	0	0	2	10	1	2	16	1
Forestry	1	0	0	0	0	1	8	2	29	41	1
Industrial production and technology	65	0	0	322	0	53	170	9	38	657	24
Social structures and relationships	5	0	0	0	0	0	3	97	44	149	5
Exploration and exploitation of space	1	0	155	0	0	11	12	0	0	179	6
Non-oriented research	43	0	0	0	0	44	66	10	50	213	8
Other civil research	0	0	0	0	1	0	0	0	1	2	0
Defence	0	0	0	0	99	0	0	0	1	100	4
Other	0	0	0	0	0	0	0	0	72	72	3
Total R&D expenditures	325	583	155	322	100	147	538	136	431	2,737	100

Abbreviations**Departments and agencies**

ACOA	Atlantic Canada Opportunities Agency	HRDC	Human Resources Development Canada
AECB	Atomic Energy Control Board	HRSDC	Human Resources & Skills Development Canada
AECL	Atomic Energy of Canada Limited	IAND	Indian Affairs and Northern Development
AGR	Agriculture and Agri-Food Canada	IDRC	International Development Research Centre
BC	Bank of Canada	IJC	International Joint Commission
C&I	Citizenship and Immigration	IND	Industry Canada
CBC	Canadian Broadcasting Corporation	ISTC	Industry, Science and Technology Canada
CCMD	Canadian Centre for Management Development	JUS	Justice
CED(Qué)	Canada Economic Development (Québec Regions)	MRC	Medical Research Council
CFI	Canada Foundation for Innovation	NA	National Archives
CFIA	Canadian Food Inspection Agency	NDEF	National Defence
CH	Canadian Heritage	NEB	National Energy Board
CHRC	Canadian Human Rights Commission	NFB	National Film Board
CIDA	Canadian International Development Agency	NGC	National Gallery of Canada
CIHR	Canadian Institutes of Health Research	NL	National Library
CITT	Canadian International Trade Tribunal	NRC	National Research Council
CMC	Canadian Museum of Civilization	NRCan	Natural Resources Canada
CMHC	Canada Mortgage and Housing Corporation	NREV	Revenue Canada
CMN	Canadian Museum of Nature	NSERC	Natural Sciences and Engineering Research Council
CNSC	Canadian Nuclear Safety Commission	NTA	National Transportation Agency of Canada
COL	Commissioner of Official Languages	PC	Privy Council Office
CRA	Canada Revenue Agency	PCA	Parks Canada Agency
CSA	Canadian Space Agency		
CSTM	Canada Science and Technology Museum	PSC	Public Service Commission
EA	External Affairs	PW&GS	Public Works and Government Services Canada
EC	Environment Canada	RCMP	Royal Canadian Mounted Police
EMR	Energy, Mines and Resources	SC	Science Council of Canada
EPC	Emergency Preparedness Canada	SDC	Social Development Canada
FAC	Foreign Affairs Canada	SGEN	Solicitor General
F&O	Fisheries and Oceans Canada	SSHRC	Social Sciences and Humanities Research Council
FA&IT	Foreign Affairs and International Trade Canada	STC	Statistics Canada
FIN	Finance	SWC	Status of Women Canada
FOR	Forestry	TB	Treasury Board
FORD	Federal Office of Regional Development Québec	TC	Transport Canada
GC	Genome Canada	URC	University Research Councils
HC	Health Canada	WEDC	Western Economic Diversification Canada

Technical notes and definitions

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 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. 13-564.

- 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: (i) checking each field of every record to ascertain whether it contains a valid code or entry; (ii) 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 for the natural sciences and engineering

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

Scientific research and experimental development (R&D)

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

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

An R&D project generally has three characteristics:

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

Related scientific activities (RSA)

Those activities which complement and extend R&D by contributing to the generation, dissemination and application of scientific and technological knowledge. The kinds of related scientific activities for the natural sciences are:

(i) 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.

(ii) 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 categories under information services include

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.

(iii) 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

Examples of special studies: a study of the viability of petrochemical complex in a certain region of Canada; the Royal commission of poverty; the MacKenzie valley pipeline inquiry; the Manitoba guaranteed income experiment; and social impact studies resulting from development of the Hibernia oil fields (net costs).

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 per se, 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. Examples of demonstration projects are the Spry Point Ark, the Geothermal heating project, Regina, and the fluidized bed combustion system, P.E.I..

(iv) 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 for the social sciences and humanities

The social sciences and humanities (SSH) field embraces all disciplines involved in studying human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, 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.

Research and experimental development (R&D)

Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humans, culture and society and the use of this stock of knowledge to devise new applications.

R&D requires the acquisition of knowledge and not just information. 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 project.

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

i. 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 costed against 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 bureaux 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.

ii. 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 categories 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 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 technologies, 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.

iii. **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.

Examples of special studies: a study of the viability of petrochemical complex in a certain region of Canada; the Royal Commission of Poverty; the MacKenzie Valley Pipeline Inquiry; the Manitoba Guaranteed Income Experiment; and social impact studies resulting from development of the Hibernia Oil Fields (net costs).

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. Examples are a study of the viability of an iron foundry in a foreign country, and a cost-benefit study of a proposed paper manufacturing centre in Manitoba.

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.

iv. **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.

Definitions related to both science fields

Administration of extramural programs

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

Intramural performance

Where the S&T activities are managed and carried out primarily by federal government employees they are classified as intramural S&T. Even where major components of the project are provided by outside agencies, such as computer services, laboratory construction, testing of prototype equipment, if the planning, supervision, reporting, and key operating functions are performed by federal personnel, then the activity is considered to be intramural. This also applies to S&T activities carried out by a department or agency on behalf of another federal department or agency on a cost recovery basis.

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

- (i) **Canadian business enterprises.** This sector is composed of business and government enterprises, including public utilities and government owned firms and frequently referred to as the industry sector. Incorporated consultants providing scientific and engineering services are also included. Industrial research institutes located at Canadian universities are considered to be in the university sector.
- (ii) **Higher education.** This sector is made up of all Canadian universities, including affiliated institutes owned, administered or staffed by universities.
- (iii) **Canadian private non profit institutions.** Charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits comprise this sector. Private non-profit institutions primarily serving or controlled by another sector should be included in that sector (e.g., the Pulp and Paper Research Institute is in Canadian business enterprises).
- (iv) **Canadian provincial and municipal governments.** Departments and agencies of these governments form this sector. Government enterprises, such as provincial utilities are included in the Canadian business enterprises sector, and hospitals in the Canadian non-profit institutions or university sector.
- (v) **Other Canadian performers.** This sector includes all individuals or organizations not belonging to any of the above sectors. In particular, it includes provincial research councils and foundations.
- (vi) **Foreign performers.** All foreign governments, 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.

Type of payment

- (i) **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.
- (ii) **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.
- (iii) **Research fellowships.** Awards to individuals for advanced research training and experience. Such payments are included as expenditures for R&D activities. Awards intended primarily to support the education of the recipients are reported as education support.

Personnel

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

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

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

Other - clerical, secretarial, administrative, operational and other support personnel.

In regard to personnel resources there are two caveats:

- (i) 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;
- (ii) 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.

Catalogued publications

Statistical Publications

- 88-001-XIE** Science Statistics (monthly)
- 88-202-XIE** Industrial Research and Development Intentions (with 2003 preliminary estimates and 2002 actual expenditures) (annual)
- 88-204-XIE** Federal Scientific Activities (annual)

Volume 29

- No. 1 Distribution of federal expenditures on science and technology by province and territories, 2002-2003 (January 2005)
- No. 2 Research and development (R&D) personnel in Canada, 1993 to 2002 (May 2005)
- No. 3 Biotechnology scientific activities in federal government departments and agencies, 2003-2004 (May 2005)
- No. 4 Industrial Research and Development, 2001 to 2005 (June 2005)
- No. 5 Estimates of total spending on research and development in the health field in Canada, 1988 to 2004 (July 2005)

Volume 28

- No. 1 Estimation of research and development expenditures in the higher education sector, 2001-2002 HERD (January 2004)
- No. 2 Total spending on research and development in Canada, 1990 to 2003 and provinces, 1990 to 2001 GERD (January 2004)
- No. 3 Distribution of federal expenditures on science and technology, by province and territories, 2001-2002 (February 2004)
- No. 4 Research and development (R&D) expenditures of private non-profit (PNP) organizations, 2002 (April 2004)
- No. 5 The provincial research organizations, 2001 (May 2004)
- No. 6 Scientific and technological (S&T) activities of provincial governments, 1994-95 to 2002-03 (June 2004)
- No. 7 Biotechnology scientific activities in selected federal government departments and agencies, 2002-2003 (July 2004)
- No. 8 Estimates of total spending on research and development in the health field in Canada, 1988 to 2003 (July 2004)
- No. 9 Industrial research and development, 2000 to 2004 (August 2004)
- No. 10 Estimation of research and development expenditures in the higher education sector, 2002-2003 (November 2004)

No. 11 Federal government expenditures on scientific activities, 2004-2005 (November 2004)

No. 12 Total spending on research and development in Canada, 1990 to 2004, and provinces, 1990 to 2002 (December 2004)

Working papers – 2005

- ST-05-01 Federal government expenditures and personnel in the natural and social sciences 1995-96 to 2004-05, (January 2005)
- ST-05-02 Provincial distribution of federal expenditures and personnel on science and technology, 1996-97 to 2002-2003 (January 2005)
- ST-05-03 Industrial R&D statistics by region, 1994 to 2002 (January 2005)
- ST-05-04 Knowledge sharing succeeds: how selected service industries rated the importance of using knowledge management practices to their success (February 2005)
- ST-05-05 Characteristics of firms that grow from small to medium size: Industrial and geographic distribution of small high-growth firms (February 2005)
- ST-05-06 Summary: Joint Statistics Canada – University of Windsor Workshop on Intellectual Property Commercialization Indicators, Windsor (March 2005)
- ST-05-07 Summary: Meeting on Commercialization Measurement, Indicators, Gaps and Frameworks, Ottawa (March 2005)
- ST-05-08 Estimates of research and development, personnel in Canada, 1979 to 2002 (May 2005)
- ST-05-09 Overview of the Biotechnology Use and Development Survey – 2003, (April 2005)
- ST-05-10 Access to Financing Capital by Canadian Innovative Biotechnology Firms, (April 2005)
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