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# Scientific and Technological (S&T) Activities of Provincial Governments and Provincial Research Organizations, 2000/2001 to 2004/2005

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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0 <sup>s</sup>	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 <i>Statistics Act</i>
E	use with caution
F	too unreliable to be published

## Note

Due to rounding, components may not add to totals.



Statistics Canada  
Science, Innovation and Electronic Information Division (SIEID)

# Scientific and Technological (S&T) Activities of Provincial Governments and Provincial Research Organizations, 2000/2001 to 2004/2005

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## Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses and governments. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

## Foreword

The fundamental mandate of the Science, Innovation and Electronic Information Division of Statistics Canada is to assure the availability of pertinent statistical information, to monitor science and technology activities in Canada and to support the development of science and technology policy. This report is one of many produced by the Science and Technology Surveys Section to respond to these needs.

The information in this document is intended primarily to be used by scientific and technological (S&T) policy makers, both federal and provincial, largely as a basis for interprovincial and intersectoral comparisons. The surveys which generate these statistics also provide input for the development of a national aggregate Research and Development (R&D) series. These national R&D estimates are used to complete international questionnaires for the Organization for Economic Co-operation and Development (OECD) and the United Nations Education, Scientific and Cultural Organization (UNESCO).

The statistics are aggregates of the provincial government science surveys conducted by Statistics Canada under contract with the provinces, and cover the period 2000/2001 to 2004/2005 preliminary. The provincial government sector consists of all provincial government departments, ministries, agencies and provincial research organizations (PRO). The PRO are surveyed separately and included in this working paper.

In the past, surveys have been conducted in as many as nine provinces, the exception being Prince Edward Island. Currently, surveys are being done in Ontario, Manitoba, Alberta and British Columbia. The following ministries sponsor the scientific surveys: Ontario Economic Development and Trade; Manitoba Energy, Science and Technology; Alberta Innovation and Science; and British Columbia Small Business and Economic Development. The Institut de la Statistique du Québec conducts a similar survey collecting only research and development (R&D) data instead of total S&T activities for the province of Quebec. More detailed information for the individual provinces are available from the provincial co-ordinators listed on page 40 of this report.

Science surveys, like other surveys, depend on respondents' interpretation of definitions and methods of calculation. Accounting records are rarely available which use a science-based classification. Recognizing the fact that the data are estimates, they are still a good representation of science expenditures for the provinces. As in any ongoing statistical exercise, revisions will be necessary as definitions and procedures become clarified. It is also important to note that the same standards have been applied to the data of each province as are applied to data of the federal government.

For the national R&D statistics (GERD), estimates are made for provinces for which there is no survey. Total spending on R&D in Canada and the provinces has been published in Catalogue no. 88-001, volume 29 no. 8.

The subsequent tables present data relating to various provincial government and provincial research organization scientific expenditures and person-years.

This publication was prepared by **Christine Delorey** under the direction of **Janet Thompson**, Unit Head, Science and Technology Surveys Section, Science, Innovation and Electronic Information Division.

We want to thank those who replied to each of the provincial and PRO surveys. Without their invaluable help and cooperation, the production of this report would not have been possible.

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#### Abbreviations:

PGDP	Provincial gross domestic product
GERD	Gross Domestic Expenditures on Research and Development
S&T	Science and Technology
R&D	Research and Development
RSA	Related Scientific Activities
S&T =	R&D plus RSA
NSE	Natural Sciences and Engineering
SSH	Social Sciences and Humanities

## History of provincial government science and technology (S&T) surveys

Prior to 1974, estimates were made for provincial government science and technology (S&T) expenditures using provincial estimates and public accounts.

In 1974, Ontario, Alberta and Nova Scotia sought the assistance of Statistics Canada in conducting surveys of S&T spending by their respective governments. In 1975, Saskatchewan joined this group, followed by British Columbia in 1977, Manitoba and New Brunswick in 1984, Newfoundland and Labrador in 1986 and Quebec in 1989.

In 1993/1994, three provinces, Newfoundland, New Brunswick and Nova Scotia, did not contract with Statistics Canada for a survey due to budget constraints. In 1994/1995, the province of Quebec collected only R&D expenditures instead of total S&T. In 2001/2002 Saskatchewan did not contract with Statistics Canada for a survey. In 2004/2005, British Columbia did not contract Statistics Canada to conduct a survey however in 2005/2006 they came back agreeing to provide actual data for 2003/2004 and 2004/2005 as well as estimates for 2005/2006. We are in the midst of compiling these statistics which will be in the next version of this report.

## Provincial research organizations

Statistics presented are derived from the seven *Provincial Research Organizations* mentioned on page 38 of this working paper.

All of these organizations have been established by their respective provincial and territorial governments, with a variety of enabling legislation and powers, to provide technical support to primary and secondary industries, to assist in the exploitation of provincial and territorial natural resources and to enhance the economy of their provinces and territories. Small and medium-sized companies with limited in-house technical capability use the services of the provincial research organizations.

In the historical tables you will see other organizations listed that are no longer included in our survey for the following reasons:

In 2000, the transition of the incorporation of the Alberta Research Council (ARC) as a not-for-profit business under the Business Corporation Act was completed. As a result, activities of ARC are now reported on the Alberta Provincial Government Scientific Activities survey.

## Federal / provincial workshops on S&T statistics

In the fall of 1977, the first federal-provincial meeting was held in Ottawa. Representatives from British Columbia, Alberta, Saskatchewan, Ontario and Nova Scotia attended; as well as Statistics Canada and members of the Ministry of State for Science and Technology (MOSST).

The next meeting was held in 1984 with representatives from British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and New Brunswick attending. Statistics Canada sponsored the meeting and invited representatives from MOSST, Energy, Mines and Resources (EMR) and the Science Council. The objectives of the conference were to:

- Provide provincial science policy and statistical users with an overview of products and services of the Science and Technology Statistics Division (STSD);
- Provide a forum to allow discussion between STSD and provincial representatives to exchange views on science statistics; and
- Achieve consensus on how to proceed with future provincial surveys.

In 1999, Ontario proposed that Statistics Canada renew federal/provincial conferences and make them an annual event. Statistics Canada agreed and co-hosted the 1999 conference in Toronto. The agenda included topics such as innovation surveys, biotechnology surveys, intellectual properties in higher education, e-commerce and provincial needs and proposals.

Quebec and Statistics Canada co-hosted the 2000 conference held in Quebec City. Discussions included economic indicators, an innovation study for Ontario, and biotechnology measurement.

In the fall of 2001, British Columbia and Statistics Canada co-hosted the conference in Victoria. Provincial representatives discussed high technology indicators, innovation index, and user needs and challenges. Statistics Canada presented an overview of current program developments and future plans.

Alberta and Statistics Canada co-hosted the 2002 conference held in Edmonton. Discussions included provincial indicators and an overview of current program developments and future plans.

In the fall of 2003, Statistics Canada was supposed to host the 5<sup>th</sup> annual conference in Ottawa. Due to budget constraints of many provincial governments, the conference was postponed and has not yet been re-instated.

## Definitions

This report covers those scientific and technological activities which involve the generation, dissemination and application of new scientific and technological knowledge. The central activity is research and experimental development (R&D). In addition, there are a number of activities closely related to R&D; these are termed related scientific activities (RSA).

R&D is creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge, including knowledge of culture and society and the use of this stock of knowledge to devise new applications.

It requires the acquisition of knowledge and not just information. New knowledge involves the integration of newly acquired information into existing hypotheses or the re-evaluation of existing observations.

The major related scientific activities are education support, technical surveys, statistical surveys, information services, special services and studies, and museum services. Education support and museum services are largely self-explanatory.

Technical surveys are activities directed towards exploration and systematic description of the earth and its natural resources. The activities include gathering, processing, collating and analyzing of data on natural phenomena except when part of a research project or a museum service. The preparation of maps and survey reports, their printing and cataloguing, are also included.

Statistical surveys are activities directed toward the collecting, processing and disseminating of statistics on humankind, their economic and social activities. Included are the development of technical methodology, statistical analysis and vital statistics.

Information services are all work directed to recording, classifying, translating, and disseminating information resulting from R&D in the social sciences or required in support of such R&D. Included are the operations of specialized libraries and archives, the publication of scholarly journals and bibliographies, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

Special services and studies in the natural sciences are activities 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.

In the social sciences, special services and studies are systematic investigations carried out in order to provide information needed for planning or policy formulation, including feasibility studies and demonstration projects.



Scientific and technological activities take place in both natural sciences and social sciences and humanities. The natural sciences consist of disciplines concerned with understanding, exploring, developing or utilizing the natural world. The social sciences and humanities embrace all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting humans.

Six performing sectors are identified.

**Intramural** refers to the provincial ministry, department or agency performing a scientific activity.

**Business enterprise** denotes largely private corporations but also includes crown corporations with a commercial function (e.g., power utilities) and industrial research institutes not controlled by another institution.

**The higher education sector** covers post secondary educational institutions and affiliated teaching and research facilities.

**Hospitals and health organizations** – Canadian universities and health organizations which are not part of university medical schools, as well as private non-profit organizations.

**Provincial research organizations** include:

1. New Brunswick Research and Productivity Council,
2. Centre de recherche industriel du Québec,
3. Industrial Technology Centre (Manitoba),
4. Saskatchewan Research Council,
5. Yukon Research Council,
6. Nunavut Research Institute,
7. Aurora Research Institute (Aurora College N.W.T.)

**Other** includes the federal government, municipal governments, individuals, institutions not identified with any other sector, and foreign performers.

Departmental personnel are classified into three major categories. *Scientific and professional* includes persons in a job requiring at least one academic degree or nationally recognized professional qualification. The *Technical* category includes people in jobs requiring specialized vocational or technical training beyond the secondary level. *Other* includes clerical, secretarial, administrative, operational and other support personnel. Personnel data are reported in full-time equivalent which is simply the portion of a person's time spent on S&T activities.

The objectives listed in this survey do not represent the total range of possible objectives; however, they are intended to cover the major areas of current technological interest. Respondents are asked to report expenditures under the objective which is primary to that expenditure.

## Highlights

Provincial government and Provincial Research Organization expenditures on research and development (R&D) are aggregated into the Gross Domestic Expenditures on Research and Development (GERD). The Indicators Section of this report addresses the GERD.

- In 2003/2004, provincial governments performed 1.2% (\$294 million) of GERD in Canada. The Provincial Research Organizations performed 0.1% (\$24 million). The Alberta government was the largest performer with \$102 million. This detail is shown in the table on page 12.
- In the same year, the provincial governments funded 5.8% (\$1,392 million) of the GERD in Canada, up 17.7% over 2002/2003. The Quebec and Ontario governments were the largest contributors with \$458 million and \$457 million respectively.

The provincial government sector provides not only R&D data but total science and technology (S&T) data. Tables providing Provincial government detail are found in the Provincial Government sector beginning on page 13.

- The 2004/2005 preliminary expenditures indicate an increase in science and technology (S&T) expenditures by all provincial governments surveyed (Ontario, Manitoba and Alberta). Government data for the province of Quebec are only available for R&D as S&T activities are not collected.
- However, expenditures on R&D forecast for 2004/2005 are showing a decline in Ontario of 4.8% and in Quebec (25.7%). On the other hand, increases in Manitoba 14.6% and Alberta 15.5% have been forecast.
- Table 4 indicates that in 2004/2005 the provincial governments, although they do perform some R&D expenditures in-house, grant a large portion out to the higher education sector.
- In all provinces surveyed, personnel involved in S&T activities in the provincial governments sector are mostly considered to be in the scientific and professional category.
- The three most notable objectives of scientific expenditures for the following provincial governments, as shown in table 6 are: Ontario - Basic research (32%), Public health (24%), and Social development (12%), Manitoba - Social development (29%), Infrastructure (21%), and Public health (17%), and Alberta - Public health (21%); Basic research (19%) and Agriculture (17%).

As shown on page 9, there are only seven provincial research organizations active in Canada at this time. They are surveyed for their activities in science and technology.

- The provincial research organizations' (PRO) sector spent \$73 million on scientific expenditures in 2004, which was a 3% decrease from 2003. The Centre de recherche industrielle du Québec had the highest total expenditures of \$34.5 million in 2004, and the Saskatchewan Research Council was second with \$25.3 million. The two largest performers made up 82% of the PRO sector's scientific activities.
- Since 2001, the Centre de recherche industrielle du Québec has been the largest performer in the PRO sector representing at least 50% of total S&T expenditures and more than 61% of R&D.
- Table 32 provides the source of funds of the provincial research organizations from 2000 to 2003. In 2003, the largest funders of provincial research organizations were Canadian industry (40.1%) followed by provincial governments (39.7%).

## Provincial Indicators

Provincial indicators, 2003					
Province	Population <sup>1</sup>	Provincial Gross Domestic Product (PGDP) <sup>2</sup>	Gross Domestic Expenditures on Research and Development (GERD) <sup>3</sup>	GERD/PGDP <sup>3</sup>	GERD/Capita
	(000)	(\$000,000)	(\$000,000)	ratio	dollars
Newfoundland and Labrador	518	18,131	161	0.9	311
Prince Edward Island	137	3,845	42	1.1	307
Nova Scotia	936	28,715	410	1.4	438
New Brunswick	751	22,179	194	0.9	258
Quebec*	7,494	252,367	6,856	2.7	915
Ontario*	12,260	493,345	10,700	2.2	873
Manitoba	1,162	37,719	443	1.2	381
Saskatchewan	995	36,394	391	1.1	393
Alberta	3,160	171,175	1,821	1.1	576
British Columbia	4,155	145,948	1,969	1.3	474
<b>Canada<sup>4</sup></b>	<b>31,669</b>	<b>1,216,191</b>	<b>23,992</b>	<b>2.0</b>	<b>758</b>

1. CANSIM, Table 051-0001.

2. CANSIM, Table 384-0002.

3. *Total spending on research and development in Canada, 1990 to 2005<sup>a</sup> and provinces, 1990 to 2003*, 88-001 XIE Vol. 29 No. 8 or in CANSIM, Table 358-0001.

4. Includes the Yukon, Northwest Territories and Nunavut, and the National Capital Region (see note below).

\* Quebec and Ontario GERD figures exclude federal government expenditures of \$999 million performed in the National Capital Region.

**Provincial distribution of gross expenditures on R&D by performing and funding sectors, 2003/2004**

Province	N.-L.	P.E.I.	N.S.	N.B.	Que.*	Ont.*	Man.	Sask.	Alta.	B.C.	Subtotal Canada <sup>1</sup>	NCR	Total Canada <sup>1</sup>
millions of dollars													
<b>Performing Sector</b>													
Federal government	23	12	65	30	314	351	63	54	87	80	1,084	999	<b>2,083</b>
Provincial governments	5	0	6	2	67	87	4	4	102	17	294	0	<b>294</b>
PRO	0	0	0	2	15	0	0	7	0	0	24	0	<b>24</b>
Business enterprise	19	7	78	43	4,115	7,066	126	82	779	1,075	13,391	0	<b>13,391</b>
Higher Education <sup>2</sup>	114	23	261	117	2,345	3,196	250	244	853	797	8,200	0	<b>8,200</b>
<b>All sectors</b>	<b>161</b>	<b>42</b>	<b>410</b>	<b>194</b>	<b>6,856</b>	<b>10,700</b>	<b>443</b>	<b>391</b>	<b>1,821</b>	<b>1,969</b>	<b>22,993</b>	<b>999</b>	<b>23,992</b>
<b>Funding Sector</b>													
Federal government	60	20	127	61	1,047	1,286	132	121	319	334	3,512	983	<b>4,495</b>
Provincial governments	6	0	14	8	458	457	24	39	268	117	1,391	1	<b>1,392</b>
PRO	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Business enterprise	23	6	72	48	3,701	6,025	131	88	782	946	11,823	15	<b>11,838</b>
Higher Education <sup>2</sup>	68	16	172	75	1,161	1,666	146	133	365	403	4,205	0	<b>4,205</b>
Foreign	4	0	25	2	489	1,266	10	10	87	169	2,062	0	<b>2,062</b>
<b>All sectors</b>	<b>161</b>	<b>42</b>	<b>410</b>	<b>194</b>	<b>6,856</b>	<b>10,700</b>	<b>443</b>	<b>391</b>	<b>1,821</b>	<b>1,969</b>	<b>22,993</b>	<b>999</b>	<b>23,992</b>

1. Includes the Yukon, Northwest Territories and Nunavut.

2. Includes private non-profit institutions.

\* Quebec and Ontario figures exclude federal government expenditures performed in the National Capital Region.

# **Provincial governments**

**Table 1 Total expenditures of provincial governments on scientific activities, by activity, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
	thousands of dollars				
<b>S&amp;T</b>					
Ontario	619,779	684,382	675,850	760,486	769,536
Manitoba	52,098	54,185	66,166	80,769	84,666
Saskatchewan <sup>1</sup>	96,030	93,780	..	..	..
Alberta <sup>2</sup>	263,794	317,744	333,421	313,546	362,593
British Columbia <sup>3</sup>	338,512	240,602	297,707	233,822	..
<b>R&amp;D</b>					
Quebec <sup>4</sup>	429,399	426,353	412,961	559,537	415,774
Ontario	421,015	443,513	438,385	512,584	487,729
Manitoba	19,830	20,545	19,639	23,495	26,937
Saskatchewan <sup>1</sup>	76,253	71,785	75,374	79,143	83,100
Alberta <sup>2</sup>	197,756	245,295	248,785	241,407	263,330
British Columbia <sup>3</sup>	199,949	93,555	175,814	121,132	..

1. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

4. Since 1994/1995, the province of Quebec collects only R&D activities.

**Table 2 Personnel of provincial governments engaged in scientific activities, by activity and by province, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
	full-time equivalent <sup>1</sup>				
<b>S&amp;T</b>					
Ontario	2,366	2,390	2,632	2,362	2,470
Manitoba	427	440	501	605	605
Saskatchewan <sup>2</sup>	253	275	..	..	..
Alberta <sup>3</sup>	815	1,345	1,205	1,198	1,268
British Columbia <sup>4</sup>	1,216	1,739	1,364	1,231	..
<b>R&amp;D</b>					
Quebec <sup>5</sup>	605	598	724	721	729
Ontario	688	891	1,033	950	1,008
Manitoba	41	36	51	57	60
Saskatchewan <sup>2</sup>	52	52	55	57	60
Alberta <sup>3</sup>	300	839	740	656	692
British Columbia <sup>4</sup>	325	282	214	185	..

1. A measure of the time actually devoted to the conduct of scientific activities.

2. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.

3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

4. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

5. Since 1994/1995, the province of Quebec collects only R&D activities.

**Table 3 Provincial governments scientists and professionals engaged in scientific activities, by activity and by province, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>r</sup>	2004/2005 <sup>p</sup>
	full-time equivalent <sup>1</sup>				
<b>S&amp;T</b>					
Ontario	1,307	1,331	1,540	1,413	1,507
Manitoba	267	280	290	379	379
Saskatchewan <sup>2</sup>	172	187	..	..	..
Alberta <sup>3</sup>	384	597	523	553	616
British Columbia <sup>4</sup>	660	665	556	503	..
<b>R&amp;D</b>					
Quebec <sup>5</sup>	336	328	379	385	401
Ontario	412	520	620	548	587
Manitoba	33	28	31	38	40
Saskatchewan <sup>2</sup>	38	41	43	45	47
Alberta <sup>3</sup>	127	319	240	241	238
British Columbia <sup>4</sup>	178	148	128	115	..

1. A measure of the time actually devoted to the conduct of scientific activities.
2. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.
3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
4. No estimates were made for British Columbia. The actual data will be available in the next version of this report.
5. Since 1994/1995, the province of Quebec collects only R&D activities.



**Table 4 Total expenditures of provincial governments on scientific activities, by activity and by sector of performance, 2004/2005<sup>P</sup>**

Province	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
thousands of dollars							
<b>S&amp;T</b>							
Ontario	263,558	21,385	353,314	79,991	...	51,288	<b>769,536</b>
Manitoba	58,042	1,251	15,353	4,794	480	4,746	<b>84,666</b>
Alberta <sup>1</sup>	180,437	25,583	113,084	7,208	...	19,281	<b>362,593</b>
<b>R&amp;D</b>							
Quebec <sup>2</sup>	68,412	29,179	246,542	20,367	2,707	48,567	<b>415,774</b>
Ontario	85,646	13,488	304,600	58,113	...	25,882	<b>487,729</b>
Manitoba	4,101	525	15,307	4,794	470	1,740	<b>26,937</b>
Saskatchewan <sup>3</sup>	3,936	6,519	41,421	1,636	9,946	19,643	<b>83,100</b>
Alberta <sup>1</sup>	113,700	8,804	127,058	6,658	...	7,110	<b>263,330</b>

1. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

2. Since 1994/1995, the province of Quebec collects only R&D activities.

3. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.

**Table 5 Personnel of provincial governments engaged in scientific activities, by activity and category, 2004/2005**

Activity / category	Quebec <sup>1</sup>	Ontario	Manitoba	Saskatchewan <sup>2</sup>	Alberta <sup>3</sup>
	full-time equivalent				
<b>Research and development:</b>					
Scientific and professional	295	554	37	31	202
Technical	182	287	7	2	235
Other	46	101	11	4	171
<i>Sub-total</i>	523	942	55	37	608
<b>Administration of extramural programs for R&amp;D:</b>					
Scientific and professional	106	33	3	16	36
Technical	67	5	0	0	10
Other	33	28	2	7	38
<i>Sub-total</i>	206	66	5	23	84
<b>Related scientific activities:</b>					
Scientific and professional	..	884	336	..	354
Technical	..	258	139	..	177
Other	..	265	65	..	14
<i>Sub-total</i>	..	1,407	540	..	545
<b>Administration of extramural programs for RSA:</b>					
Scientific and professional	..	37	3	..	24
Technical	..	3	0	..	6
Other	..	16	2	..	1
<i>Sub-total</i>	..	56	5	..	31
<b>Total scientific activities:</b>					
Scientific and professional	..	1,507	379	..	616
Technical	..	553	146	..	428
Other	..	410	80	..	224
<i>Sub-total</i>	..	2,470	605	..	1,268
<b>Total</b>	..	<b>2,470</b>	<b>605</b>	..	<b>1,268</b>

1. Since 1994/1995, the province of Quebec collects only R&D activities.

2. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.

3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 6 Total expenditures on scientific activities, by objective, and by province, 2004/2005**

Objective	Ontario	Manitoba	Alberta
	thousands of dollars		
Exploration and utilization of the earth	20,279	7,519	0
Infrastructure and general planning of land use:			
Transportation systems	2,648	4,041	9,623
Telecommunications	3,150	13,566	0
Other	9,641	7	31,609
Pollution, conservation and protection of the environment	64,273	4,456	34,668
Public health	187,827	14,618	85,305
Production, distribution and rational utilization of energy	2,359	436	36,148
Agriculture production and technology	53,248	4,781	48,332
Fishing	6,900	1,229	170
Forestry	15,200	3,511	10,777
Industrial production and technology	44,356	1,747	18,243
Social development	88,916	24,220	12,396
Exploration and exploitation of space	2,761	0	0
Basic research	249,571	4,381	74,967
Other civil research	18,407	154	355
<b>Total</b>	<b>769,536</b>	<b>84,666</b>	<b>362,593</b>

**Table 7 Total expenditures on R&D, by objective and by province, 2004/2005**

Objective	Ontario	Manitoba	Saskatchewan	Alberta
	thousands of dollars			
Exploration and utilization of the earth	2,700	374	1,909	0
Infrastructure and general planning of land use:				
Transportation systems	1,062	63	1,934	926
Telecommunications	2,044	726	555	0
Other	4,021	0	0	16,819
Pollution, conservation and protection of the environment	6,264	516	3,521	8,744
Public health	144,050	14,141	10,517	69,268
Production, distribution and rational utilization of energy	302	400	1,006	33,257
Agriculture production and technology	42,696	3,325	32,749	31,760
Fishing	6,693	0	0	0
Forestry	12,353	575	463	9,629
Industrial production and technology	32,942	857	3,550	17,417
Social development	4,629	1,579	64	2,988
Exploration and exploitation of space	2,025	0	0	0
Basic research	224,397	4,381	26,832	72,522
Other civil research	1,551	0	0	0
<b>Total</b>	<b>487,729</b>	<b>26,937</b>	<b>83,100</b>	<b>263,330</b>

**Table 8 Total expenditures of provincial governments on scientific activities, by activity, in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
<b>S&amp;T</b>					
Ontario	462,904	524,230	516,891	608,260	625,215
Manitoba	31,010	34,053	45,144	50,813	52,606
Saskatchewan <sup>1</sup>	80,629	77,779	..	..	..
Alberta <sup>2</sup>	249,333	292,842	311,509	291,865	330,023
British Columbia <sup>3</sup>	280,761	202,445	214,022	182,558	..
<b>R&amp;D</b>					
Quebec <sup>4</sup>	323,267	339,779	301,518	436,550	323,202
Ontario	350,567	402,306	389,385	450,849	433,137
Manitoba	16,934	17,380	16,394	19,804	22,512
Saskatchewan <sup>1</sup>	72,750	68,304	71,719	75,305	79,070
Alberta <sup>2</sup>	193,558	240,482	242,518	235,564	251,888
British Columbia <sup>3</sup>	189,863	87,718	115,614	93,426	..

1. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia due to the fact that actual data will be available in the next version of this report.
4. Since 1994/1995, the province of Quebec collects only R&D activities.

**Table 9 Intramural expenditures of provincial governments on scientific activities, in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Ontario	133,403	152,938	150,694	191,252	217,298
Manitoba	14,281	15,177	28,800	31,994	31,827
Saskatchewan <sup>1</sup>	9,092	10,388	..	..	..
Alberta <sup>2</sup>	68,020	150,807	141,406	142,742	173,523
British Columbia <sup>3</sup>	69,395	128,311	111,893	98,124	..

1. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 10 Payments to business enterprises by provincial governments on scientific activities in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Ontario	2,184	27,786	12,896	7,016	13,414
Manitoba	653	1,629	250	391	658
Saskatchewan <sup>1</sup>	5,297	6,919	..	..	..
Alberta <sup>2</sup>	21,794	21,516	25,954	17,768	21,330
British Columbia <sup>3</sup>	63,064	38,574	26,925	8,861	..

1. Estimates for S&T in Saskatchewan were not made, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 11 Payments to the higher education sector, by provincial governments, on scientific activities in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Ontario	271,229	279,313	296,378	310,955	312,886
Manitoba	9,390	9,314	10,329	11,483	12,900
Saskatchewan <sup>1</sup>	42,105	35,295	..	..	..
Alberta <sup>2</sup>	101,021	99,749	106,710	116,525	125,836
British Columbia <sup>3</sup>	34,406	27,431	64,553	60,284	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 12 Payments to other performers<sup>1</sup>, by provincial governments, on scientific activities in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Ontario	19,851	22,770	24,133	39,749	30,254
Manitoba	1,662	3,111	2,999	2,545	1,947
Saskatchewan <sup>2</sup>	14,208	15,166	..	..	..
Alberta <sup>3</sup>	18,089	12,339	29,639	13,034	8,769
British Columbia <sup>4</sup>	2,527	4,042	2,439	1,082	..

1. Other performers include the federal government, municipal governments, individuals, institutions not identified with any other sector and foreign performers.
2. S&T estimates were not made for Saskatchewan, only estimates for R&D.
3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
4. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 13 Intramural expenditures of provincial governments on R&D in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
	thousands of dollars				
Newfoundland and Labrador <sup>e</sup>	5,000	5,000	5,000	5,000	5,000
Nova Scotia <sup>e</sup>	6,000	6,000	6,000	6,000	6,000
New Brunswick <sup>e</sup>	2,000	2,000	2,000	2,000	2,000
Quebec	34,242	40,750	48,775	50,489	50,403
Ontario	65,014	70,952	72,768	82,929	82,144
Manitoba	1,890	1,772	2,083	2,761	2,728
Saskatchewan <sup>1</sup>	2,980	3,263	3,426	3,597	3,777
Alberta <sup>2</sup>	28,894	113,273	107,920	101,140	113,700
British Columbia <sup>3</sup>	25,155	21,857	19,715	15,705	..

**Note:** The source is from *Estimates of Canadian Research and Development Expenditures (GERD), Canada 1994 to 2005, and by province 1994 to 2003* no. 88F0006XIE Vol. 29 No. 8, December 2005, or in CANSIM, table 358-0001.

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

<sup>e</sup> Estimated data.

**Table 14 Payments to business enterprises by provincial governments, on R&D in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
	thousands of dollars				
Quebec	22,105	23,295	25,948	65,606	28,264
Ontario	1,527	25,960	11,053	2,431	12,161
Manitoba	62	587	196	391	525
Saskatchewan <sup>1</sup>	4,305	5,631	5,913	6,208	6,519
Alberta <sup>2</sup>	7,741	9,673	13,892	8,328	7,469
British Columbia <sup>3</sup>	19,438	32,390	25,165	6,412	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 15 Payments to the higher education sector, by provincial governments, on R&D in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Quebec	145,018	227,400	176,433	267,307	187,423
Ontario	247,947	258,457	269,122	280,805	276,139
Manitoba	9,390	9,142	10,105	11,476	12,859
Saskatchewan <sup>1</sup>	41,936	34,995	36,745	38,582	40,511
Alberta <sup>2</sup>	101,019	99,696	104,389	116,256	125,040
British Columbia <sup>3</sup>	32,394	25,756	61,190	56,997	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 16 Payments to other performers<sup>1</sup>, by provincial governments, on R&D in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Quebec <sup>2</sup>	60,973	16,255	33,605	35,464	44,856
Ontario	2,435	7,792	9,273	30,691	16,679
Manitoba	568	1,057	1,244	786	1,136
Saskatchewan <sup>3</sup>	13,602	14,410	15,131	15,887	16,681
Alberta <sup>4</sup>	16,130	9,792	8,517	8,044	5,114
British Columbia <sup>5</sup>	1,846	3,963	1,371	144	..

1. Other performers include the federal government, municipal governments, individuals, institutions not included with any other sector, and foreign performers.
2. Since 1994/1995, the province of Quebec collects only R&D activities.
3. S&T estimates were not made for Saskatchewan, only estimates for R&D.
4. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
5. No estimates were made for British Columbia. The actual data will be available in the next version of this report.



**Table 17 Personnel of provincial governments engaged in scientific activities, by activity, in the natural sciences and engineering, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
	full-time equivalent <sup>1</sup>				
<b>S&amp;T</b>					
Ontario	1,622	1,663	1,960	1,959	2,041
Manitoba	210	218	288	289	289
Saskatchewan <sup>2</sup>	127	143	..	..	..
Alberta <sup>3</sup>	766	1,300	1,113	1,120	1,196
British Columbia <sup>4</sup>	790	1,471	1,198	1,049	..
<b>R&amp;D</b>					
Quebec <sup>5</sup>	434	438	524	510	501
Ontario	633	850	987	884	943
Manitoba	29	26	41	39	39
Saskatchewan <sup>2</sup>	49	50	53	55	58
Alberta <sup>3</sup>	299	833	738	642	692
British Columbia <sup>4</sup>	319	276	208	177	..

1. A measure of the time actually devoted to the conduct of scientific activities.

2. S&T estimates were not made for Saskatchewan, only estimates for R&D.

3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

4. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

5. Since 1994/1995, the province of Quebec collects only R&D activities.

**Table 18 Total expenditures of provincial governments on scientific activities, by activity, in the natural sciences and engineering, 2004/2005**

Activity	Quebec	Ontario	Manitoba	Saskatchewan <sup>1</sup>	Alberta
	thousands of dollars				
<b>Research and development:</b>					
Current expenditures					
In-house	30,341	70,117	2,361	..	47,663
Contracts	3,683	46,114	189	..	33,370
Grants	232,137	302,908	18,930	..	133,562
Research fellowships	37,638	3,614	675	..	3,555
Administration of extramural R&D programs	17,281	6,012	357	..	12,446
<i>Sub-total</i>	<i>321,080</i>	<i>428,765</i>	<i>22,512</i>	<i>..</i>	<i>230,596</i>
Capital expenditures	2,122	4,372	0	..	21,292
<b>Total R&amp;D</b>	<b>323,202</b>	<b>433,137</b>	<b>22,512</b>	<b>79,070</b>	<b>251,888</b>
<b>Related scientific activities:</b>					
Current expenditures					
Education support	..	19,506	31	..	204
Technical surveys	..	54,469	12,860	..	36,244
Information services	..	19,862	5,266	..	15,317
Special services and studies	..	34,802	6,255	..	22,351
Museum services	..	39,589	517	..	2,100
Administration of extramural RSA programs	..	608	46	..	1,597
<i>Sub-total</i>	<i>..</i>	<i>168,836</i>	<i>24,975</i>	<i>..</i>	<i>77,813</i>
Capital expenditures	..	23,242	5,119	..	322
<b>Total RSA</b>	<b>..</b>	<b>192,078</b>	<b>30,094</b>	<b>..</b>	<b>78,135</b>
<b>Total</b>	<b>..</b>	<b>625,215</b>	<b>52,606</b>	<b>..</b>	<b>330,023</b>

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

**Table 19 Total expenditures of provincial governments on scientific activities, in the natural sciences and engineering, by activity and sector of performance, 2004/2005**

Province	Intramural	Business enterprises	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
thousands of dollars							
<b>S&amp;T</b>							
Ontario	217,298	13,414	312,886	51,363	...	30,254	<b>625,215</b>
Manitoba	31,827	658	12,900	4,794	480	1,947	<b>52,606</b>
Alberta <sup>1</sup>	173,523	21,330	125,836	565	...	8,769	<b>330,023</b>
<b>R&amp;D</b>							
Quebec <sup>2</sup>	50,403	65,606	267,307	14,273	3,411	35,464	<b>323,202</b>
Ontario	82,144	12,161	276,139	46,014	...	16,679	<b>433,137</b>
Manitoba	2,728	525	12,859	4,794	470	1,136	<b>22,512</b>
Saskatchewan <sup>3</sup>	3,777	6,519	40,511	1,636	9,946	16,681	<b>79,070</b>
Alberta <sup>1</sup>	113,700	7,469	125,040	565	...	5,114	<b>251,888</b>

1. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

2. Since 1994/1995, the province of Quebec collects only R&D activities.

3. S&T estimates were not made for Saskatchewan, only estimates for R&D.

**Table 20 Personnel of provincial governments engaged in scientific activities, by activity and category, in the natural sciences and engineering, 2004/2005**

Activity / category	Quebec <sup>1</sup>	Ontario	Manitoba	Saskatchewan <sup>2</sup>	Alberta <sup>3</sup>
	full-time equivalent				
<b>Research and development:</b>					
Scientific and professional	158	515	19	29	202
Technical	159	276	7	2	235
Other	29	99	8	4	171
<i>Sub-total</i>	<i>345</i>	<i>890</i>	<i>34</i>	<i>35</i>	<i>608</i>
<b>Administration of extramural programs for R&amp;D:</b>					
Scientific and professional	79	28	3	16	36
Technical	52	4	0	0	10
Other	25	21	2	7	38
<i>Sub-total</i>	<i>156</i>	<i>53</i>	<i>5</i>	<i>23</i>	<i>84</i>
<b>Related scientific activities:</b>					
Scientific and professional	..	657	102	..	309
Technical	..	243	122	..	170
Other	..	183	25	..	10
<i>Sub-total</i>	<i>..</i>	<i>1,083</i>	<i>249</i>	<i>..</i>	<i>489</i>
<b>Administration of extramural programs for RSA:</b>					
Scientific and professional	..	13	1	..	8
Technical	..	0	0	..	6
Other	..	2	0	..	1
<i>Sub-total</i>	<i>..</i>	<i>15</i>	<i>1</i>	<i>..</i>	<i>15</i>
<b>Total scientific activities:</b>					
Scientific and professional	..	1,213	125	..	555
Technical	..	523	129	..	421
Other	..	305	35	..	220
<i>Sub-total</i>	<i>..</i>	<i>2,041</i>	<i>289</i>	<i>..</i>	<i>1,196</i>
<b>Total</b>	<b>..</b>	<b>2,041</b>	<b>289</b>	<b>..</b>	<b>1,196</b>

1. Since 1994/1995, the province of Quebec collects only R&D activities.

2. S&T estimates were not made for Saskatchewan, only estimates for R&D.

3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 21 Total expenditures of provincial governments on scientific activities in the natural sciences and engineering, by objective, 2004/2005**

Objective	Ontario	Manitoba	Alberta <sup>1</sup>
	thousands of dollars		
Exploration and utilization of the earth	20,279	7,519	0
Infrastructure and general planning of land use:			
Transportation systems	2,176	4,041	9,623
Telecommunications	3,150	10,649	0
Other	4,228	7	31,609
Pollution, conservation and protection of the environment	64,245	4,425	34,668
Public health	116,585	12,194	65,611
Production, distribution and rational utilization of energy	2,049	350	35,921
Agriculture production and technology	51,933	4,421	48,332
Fishing	6,900	1,229	170
Forestry	15,200	2,611	10,777
Industrial production and technology	44,281	857	17,523
Social development	54,241	517	2,832
Exploration and exploitation of space	2,761	0	0
Basic research	240,458	3,786	72,957
Other civil research	1,729	0	0
<b>Total</b>	<b>625,215</b>	<b>52,606</b>	<b>330,023</b>

1. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 22 Total expenditures of provincial governments on R&D in the natural sciences and engineering, by objective, 2004/2005**

Objective	Ontario	Manitoba	Saskatchewan <sup>1</sup>	Alberta <sup>2</sup>
	thousands of dollars			
Exploration and utilization of the earth	2,700	374	1,816	0
Infrastructure and general planning of land use:				
Transportation systems	597	63	1,841	926
Telecommunications	2,044	726	528	0
Other	3,166	0	0	16,819
Pollution, conservation and protection of the environment	6,264	516	3,350	17,219
Public health	102,350	12,063	10,006	60,814
Production, distribution and rational utilization of energy	302	350	957	33,257
Agriculture production and technology	41,381	3,202	31,162	31,760
Fishing	6,693	0	0	0
Forestry	12,353	575	441	9,629
Industrial production and technology	32,942	857	3,378	17,417
Social development	711	0	61	0
Exploration and exploitation of space	2,025	0	0	0
Basic research	218,143	3,786	25,530	72,522
Other civil research	1,466	0	0	0
<b>Total</b>	<b>433,137</b>	<b>22,512</b>	<b>79,070</b>	<b>251,888</b>

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 23 Total expenditures of provincial governments on scientific activities, by activity, in the social sciences and humanities, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
<b>S&amp;T</b>					
Ontario	156,875	160,152	158,959	152,226	144,321
Manitoba	21,088	20,132	21,022	29,956	32,060
Saskatchewan <sup>1</sup>	15,401	16,001	..	..	..
Alberta <sup>2</sup>	14,461	24,902	21,912	21,681	32,570
British Columbia <sup>3</sup>	57,752	38,157	83,685	51,264	..
<b>R&amp;D</b>					
Quebec <sup>4</sup>	106,132	86,574	111,443	122,986	92,572
Ontario	70,448	41,207	49,000	61,735	54,592
Manitoba	2,896	3,165	3,245	3,691	4,425
Saskatchewan <sup>1</sup>	3,503	3,481	3,655	3,838	4,030
Alberta <sup>2</sup>	4,198	4,813	6,267	5,843	11,442
British Columbia <sup>3</sup>	10,086	5,837	60,200	27,706	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.
4. Since 1994/1995, the province of Quebec collects only R&D activities.

**Table 24 Intramural expenditures of provincial governments on scientific activities, in the social sciences and humanities, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>f</sup>	2004/2005 <sup>p</sup>
thousands of dollars					
Ontario	57,405	73,221	56,713	35,573	46,260
Manitoba	18,338	16,949	17,768	24,717	26,215
Saskatchewan <sup>1</sup>	9,200	9,457	..	..	..
Alberta <sup>2</sup>	3,741	1,811	3,989	5,241	6,914
British Columbia <sup>3</sup>	41,002	25,763	17,612	19,221	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.
2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.
3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 25 Personnel of provincial governments engaged in scientific activities in the social sciences and humanities, 2000/2001 to 2004/2005**

Province	2000/2001	2001/2002	2002/2003	2003/2004 <sup>r</sup>	2004/2005 <sup>p</sup>
	full-time equivalent				
Ontario	744	727	672	403	428
Manitoba	217	222	213	316	316
Saskatchewan <sup>1</sup>	126	132	..	..	..
Alberta <sup>2</sup>	49	45	92	78	72
British Columbia <sup>3</sup>	426	268	166	182	..

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

3. No estimates were made for British Columbia. The actual data will be available in the next version of this report.

**Table 26 Total expenditures of provincial governments on scientific activities, by activity, in the social sciences and humanities, 2004/2005**

Activity	Quebec	Ontario	Manitoba	Saskatchewan <sup>1</sup>	Alberta <sup>2</sup>
	thousands of dollars				
<b>Research and development:</b>					
Current expenditures					
In-house	11,679	2,464	1,073	..	0
Contracts	2,012	38,323	850	..	60
Grants	58,665	12,926	2,277	..	11,382
Research fellowships	14,758	65	175	..	0
Administration of extramural R&D programs	5,240	796	50	..	0
<i>Sub-total</i>	<i>92,354</i>	<i>54,574</i>	<i>4,425</i>	<i>..</i>	<i>11,442</i>
Capital expenditures	218	18	0	..	0
<b>Total R&amp;D</b>	<b>92,572</b>	<b>54,592</b>	<b>4,425</b>	<b>4,030</b>	<b>11,442</b>
<b>Related scientific activities:</b>					
Current expenditures					
Administration of extramural RSA programs	..	81,076	26,653	..	18,749
	..	1,739	928	..	2,354
<i>Sub-total</i>	<i>..</i>	<i>82,815</i>	<i>27,581</i>	<i>..</i>	<i>21,103</i>
Capital expenditures	..	6,914	54	..	25
<b>Total RSA</b>	<b>..</b>	<b>89,729</b>	<b>27,635</b>	<b>..</b>	<b>21,128</b>
<b>Total</b>	<b>..</b>	<b>144,321</b>	<b>32,060</b>	<b>..</b>	<b>32,570</b>

1. S&T estimates were not made for Saskatchewan, only estimates for R&D.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.



**Table 27 Total expenditures of provincial governments on scientific activities, by activity and by sector of performance, in the social sciences and humanities, 2004/2005**

Province	Intramural	Business enterprises	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
thousands of dollars							
<b>S&amp;T</b>							
Ontario	46,260	7,971	40,428	28,628	...	21,034	<b>144,321</b>
Manitoba	26,215	593	2,453	0	0	2,799	<b>32,060</b>
Alberta <sup>1</sup>	6,914	4,253	4,248	6,643	...	10,512	<b>32,570</b>
<b>R&amp;D</b>							
Quebec <sup>2</sup>	18,009	915	59,119	8,371	2,447	3,711	<b>92,572</b>
Ontario	3,502	1,327	28,461	12,099	...	9,203	<b>54,592</b>
Manitoba	1,373	0	2,448	0	0	604	<b>4,425</b>
Saskatchewan <sup>3</sup>	159	0	910	0	0	2,961	<b>4,030</b>
Alberta <sup>1</sup>	0	1,335	2,018	6,093	...	1,996	<b>11,442</b>

1. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

2. Since 1994/1995, the province of Quebec collects only R&D activities.

3. S&T estimates were not made for Saskatchewan, only estimates for R&D.

**Table 28 Personnel of provincial governments engaged in scientific activities, by activity and category, in the social sciences and humanities, 2004/2005**

Activity / category	Quebec <sup>1</sup>	Ontario	Manitoba	Saskatchewan <sup>2</sup>	Alberta <sup>3</sup>
	full-time equivalent				
<b>Research and development:</b>					
Scientific and professional	137	39	18	2	0
Technical	24	11	0	0	0
Other	17	2	3	0	0
Sub-total	178	52	21	2	0
<b>Administration of extramural programs for R&amp;D:</b>					
Scientific and professional	27	5	0	0	0
Technical	15	1	0	0	0
Other	8	7	0	0	0
Sub-total	50	13	0	0	0
<b>Related scientific activities:</b>					
Scientific and professional	..	227	234	..	45
Technical	..	14	17	..	7
Other	..	81	40	..	4
Sub-total	..	322	291	..	56
<b>Administration of extramural programs for RSA:</b>					
Scientific and professional	..	24	2	..	16
Technical	..	3	0	..	0
Other	..	15	2	..	0
Sub-total	..	42	4	..	16
<b>Total scientific activities:</b>					
Scientific and professional	..	295	254	..	61
Technical	..	29	17	..	7
Other	..	105	45	..	4
Sub-total	..	429	316	..	72
<b>Total</b>	..	<b>429</b>	<b>316</b>	..	<b>72</b>

1. Since 1994/1995, the province of Quebec collects only R&D activities.

2. S&T estimates were not made for Saskatchewan, only estimates for R&D.

3. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 29 Total expenditures of provincial governments on scientific activities in the social sciences and humanities, by objective, 2004/2005**

Objective	Ontario	Manitoba	Alberta <sup>1</sup>
	thousands of dollars		
Exploration and utilization of the earth	0	0	0
Infrastructure and general planning of land use:			
Transportation systems	472	0	0
Telecommunications	0	2,917	0
Other	5,413	0	0
Pollution, conservation and protection of the environment	28	31	0
Public health	76,242	2,424	19,694
Production, distribution and rational utilization of energy	310	86	227
Agriculture production and technology	1,315	360	0
Fishing	0	0	0
Forestry	0	900	0
Industrial production and technology	75	890	720
Social development	34,675	23,703	9,564
Exploration and exploitation of space	0	0	0
Basic research	9,113	595	2,010
Other civil research	16,678	154	355
<b>Total</b>	<b>144,321</b>	<b>32,060</b>	<b>32,570</b>

1. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

**Table 30 Total expenditures of provincial governments on R&D in the social sciences and humanities, by objective, 2004/2005**

Objective	Ontario	Manitoba	Saskatchewan <sup>1</sup>	Alberta <sup>2</sup>
	thousands of dollars			
Exploration and utilization of the earth	0	0	92	0
Infrastructure and general planning of land use:				
Transportation systems	465	0	94	0
Telecommunications	0	0	27	0
Other	855	0	0	0
Pollution, conservation and protection of the environment	0	0	171	0
Public health	41,700	2,078	510	8,454
Production, distribution and rational utilization of energy	0	50	49	0
Agriculture production and technology	1,315	123	1,588	0
Fishing	0	0	0	0
Forestry	0	0	22	0
Industrial production and technology	0	0	172	0
Social development	3,918	1,579	3	2,988
Exploration and exploitation of space	0	0	0	0
Basic research	6,254	595	1,301	0
Other civil research	85	0	0	0
<b>Total</b>	<b>54,592</b>	<b>4,425</b>	<b>4,030</b>	<b>11,442</b>

1. R&D data has been estimated for Saskatchewan in 2004/2005.

2. All data for 2004/2005 are preliminary with the exception of the Alberta provincial government.

# **Provincial research organizations**

## Provincial Research Organizations

**Table 31 Total expenditures of provincial research organizations on scientific activities, by activity and by institute, 2000 to 2004**

Institute	2000	2001	2002	2003 <sup>r</sup>	2004 <sup>p</sup>
	thousands of dollars				
<b>S&amp;T</b>					
New Brunswick Research and Productivity Council	7,942	8,183	8,606	8,392	8,244
Centre de recherche industrielle du Québec	33,259	35,658	39,072	37,243	34,556
Industrial Technology Centre (Manitoba)	2,845	3,244	2,367	1,993	2,155
Saskatchewan Research Council	21,554	20,843	21,472	21,472	25,278
Alberta Research Council	77,629	...	...	...	...
Yukon Research Institute	664	542	867	850	867
NUNAVUT Research Institute	..	..	..	..	..
Aurora Research Institute (N.W.T.)	1,225	1,130	1,395	1,423	1,451
<b>Total</b>	<b>145,118</b>	<b>69,600</b>	<b>73,779</b>	<b>75,151</b>	<b>72,551</b>
<b>R&amp;D</b>					
New Brunswick Research and Productivity Council	1,350	1,554	1,808	1,762	1,813
Centre de recherche industrielle du Québec	12,868	14,275	16,243	14,901	13,743
Industrial Technology Centre (Manitoba)	..	..	..	..	..
Saskatchewan Research Council	7,328	6,670	7,301	7,301	8,847
Alberta Research Council	44,549	...	...	...	...
Yukon Research Institute	173	299	442	340	347
NUNAVUT Research Institute	..	..	..	..	..
Aurora Research Institute (N.W.T.)	..	..	..	..	..
<b>Total</b>	<b>66,268</b>	<b>22,798</b>	<b>25,794</b>	<b>24,278</b>	<b>24,724</b>

<b>Table 32 Source of funds for scientific activities of the provincial research organizations, 2000 to 2003</b>				
Sources and types of funds	2000	2001	2002	2003
	percent			
<b>Provincial governments:</b>				
Subsidies, grants and contributions	30.4	33.3	39.1	39.7
Contracts	21.5	7.6	7.8	7.3
<b>Federal government:</b>				
Subsidies, grants, contributions and contracts	5.3	6.3	6.1	5.0
<b>Canadian industry contracts</b>	29.6	39.3	36.3	40.1
<b>Other Canadian sources</b>	4.0	11.0	8.4	6.4
<b>Foreign</b>	9.2	2.5	2.3	1.5
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<b>Table 33 Distribution of provincial research organization personnel, by institute, 2003</b>						
Institution	R&D			S&T		
	Scientific and professional	Technical	Other	Scientific and professional	Technical	Other
	full-time equivalent <sup>1</sup>					
New Brunswick Research and Productivity Council	45	30	18	45	30	18
Centre de recherche industrielle du Québec	73	45	59	110	58	115
Industrial Technology Centre (Manitoba)	0	0	0	6	11	4
Saskatchewan Research Council	57	90	11	69	90	39
Yukon Research Institute	6	1	0	6	1	0
NUNAVUT Research Institute	..	..	..	4	7	11
Aurora Research Institute (N.W.T.)	4	7	11	4	7	11

1. A measure of the time actually devoted to the conduct of scientific activities.

## Provincial co-ordinators

Five provincial governments are currently sponsoring the Science and Technology Surveys Section in the collection of scientific activity data. Québec conducts its own survey of R&D activities and shares the data with Statistics Canada.

Below is a list of co-ordinators for the various sponsoring departments/ministries/agencies.

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## Catalogued publications

### Science, Technology and Innovation statistical publications

- 88-001-XIE [Science statistics](#)
- 88-003-XIE [Innovation analysis bulletin](#)
- 88-202-XIE [Industrial research and development, intentions \(with 2004 preliminary estimates and 2003 actual expenditures\) \(annual\)](#)
- 88-204-XIE [Federal scientific activities \(annual\)](#)
- 88F0006XIE [Science, Innovation and Electronic Information Division working papers](#)
- 88F0017MIE [Science, Innovation and Electronic Information Division research papers](#)

#### **88-001-X Volume 30 – 2006**

- No. 1 Provincial distribution of federal expenditures and personnel on science and technology, 1997/1998 to 2003/2004 (February)
- No. 2 Biotechnology scientific activities in federal government departments and agencies, 2004/2005 (March)
- No. 3 Estimates of total spending on research and development in the health field in Canada, 1988 to 2005 (May)

#### **88-001-X Volume 29 – 2005**

- No. 1 Distribution of federal expenditures on science and technology by province and territories, 2002-2003 (January)
- No. 2 Research and development (R&D) personnel in Canada, 1993 to 2002 (May)
- No. 3 Biotechnology scientific activities in federal government departments and agencies, 2003-2004 (May)
- No. 4 Industrial research and development, 2001 to 2005 (June)
- No. 5 Estimates of total spending on research and development in the health field in Canada, 1988 to 2004 (July)
- No. 6 Estimation of research and development expenditures in the higher education sector, 2003-04 (December)
- No. 7 Federal government expenditures on scientific activities, 2005/2006<sup>P</sup> (December)
- No. 8 Total spending on research and development in Canada, 1990 to 2005<sup>P</sup>, and provinces, 1990 to 2003 (December)

#### **88F0006XIE Working papers – 2006**

- No. 1 [Provincial distribution of federal expenditures and personnel on science and technology, 1997-1998 to 2003-2004 \(April\)](#)
- No. 2 [Buying and selling research and development services, 1997 to 2002 \(May\)](#)
- No. 3 [Characteristics of Growth Firms, 2004/2005 \(May\)](#)

#### **88F0006XIE Working papers – 2005**

- No. 1 [Federal government expenditures and personnel in the natural and social sciences, 1995/96 to 2004/05 \(January\)](#)

- No. 2 [Provincial distribution of federal expenditures and personnel on science and technology, 1996-97 to 2002-03 \(January\)](#)
- No. 3 [Industrial R&D statistics by region, 1994 to 2002 \(January\)](#)
- No. 4 [Knowledge sharing succeeds: how selected service industries rated the importance of using knowledge management practices to their success \(February\)](#)
- No. 5 [Characteristics of firms that grow from small to medium size: Industrial and geographic distribution of small high-growth firms \(February\)](#)
- No. 6 [Summary: Joint Statistics Canada – University of Windsor workshop on intellectual property commercialization indicators, Windsor, November 2004 \(March\)](#)
- No. 7 [Summary: Meeting on commercialization measurement, indicators, gaps and frameworks, Ottawa, December 2004 \(March\)](#)
- No. 8 [Estimates of research and development personnel in Canada, 1979 to 2002 \(April\)](#)
- No. 9 [Overview of the biotechnology use and development survey – 2003 \(April\)](#)
- No. 10 [Access to financing capital by Canadian innovative biotechnology firms \(April\)](#)
- No. 11 [Scientific and technological \(S&T\) activities of provincial governments and provincial research organizations, 1995-96 to 2003-04 \(September\)](#)
- No. 12 [Innovation in Information and Communication Technology \(ICT\) sector service industries: Results from the Survey of Innovation 2003 \(October\)](#)
- No. 13 [Innovation in selected professional, scientific and technical services: results from the Survey of Innovation 2003 \(October\)](#)
- No. 14 [Innovation in selected transportation industries: Results from the Survey of Innovation 2003 \(November\)](#)
- No. 15 [Innovation in selected industries serving the mining and forestry sectors: Results from the Survey of Innovation 2003 \(November\)](#)
- No. 16 [Functional foods and nutraceuticals: The development of value-added food by Canadian firms \(September\)](#)
- No. 17 [Industrial R&D statistics by region 1994 to 2003 \(November\)](#)
- No. 18 [Survey of intellectual property commercialization in the higher education sector, 2003 \(November\)](#)
- No. 19 [Estimation of research and development expenditures in the higher education sector, 2003-2004 \(December\)](#)
- No. 20 [Estimates of Canadian research and development expenditures \(GERD\), Canada, 1994 to 2005, and by province 1994 to 2003 \(December\)](#)