Investment, Science and Technology Division (ISTD)

Federal Science Expenditures and Personnel 2013/2014

Activities in the natural sciences and engineering

Collected under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S-19. Completion of this questionnaire is a legal requirement under this Act.

Confidential when completed.

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| Correct as required | |
|---------------------------|-------------|
| Department or Agency Name | |
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| Address | |
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| Province/Territory | Postal Code |
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Information for respondents

Survey purpose

This survey collects the financial and operating data which are essential to assure the availability of pertinent statistical information to monitor science and technology related activities in Canada and to support the development of science and technology policy. The data collected are used by federal and provincial science policy analysts and are also part of the gross domestic expenditures on research and development (GERD). Your information may also be used by Statistics Canada for other statistical and research purposes.

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STC/SAT-465-60326



GENERAL

The **natural sciences and engineering** consist of disciplines concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical, life and physical sciences.

1. EXPENDITURES BY ACTIVITY AND PERFORMER

Scientific and technological (S&T) activities are required for the generation, dissemination or initial application of new S&T knowledge. The central activity is scientific research and experimental development (R&D). In addition there are a number of activities closely related to R&D, and are termed related scientific activities (RSA). Those identified as being appropriate for the federal government in the natural sciences are: scientific data collection, information services, special services and studies and education support.

I. Research and experimental development

Research and experimental development - comprise 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 typically performed by, or under the supervision of, persons with postgraduate degrees in the natural sciences or engineering.

Item 1. In-house R&D - R&D performed by personnel of the reporting program. It may include R&D carried out on behalf of another program on a cost recovery basis.

Item 2. Contracts - payments to organizations or individuals outside the federal government for the conduct of R&D by the recipient or to provide support for the federal government's in-house R&D programs.

- a) R&D contracts contracts to an outside institution or individual to fund R&D performed by the institution or individual. The criterion is: would the performer report the contract as intramural government-funded R&D if asked? If the answer is "yes" the activity would be an R&D contract, if "no" it would be a supporting contract. Contracts to other federal government departments should be reported as a transfer of funds in question 6, page 15, of the questionnaire.
- b) Supporting contracts contracts to an outside institution or individual to provide goods or services necessary to support the in-house R&D program. Examples are contracts with data processing firms for computing services, maintenance contracts for R&D facilities, or procurement contracts for specialized equipment which is not considered capital. The **total** amount reported for this activity should be reported under the **intramural column** on pages 4 to 6.
- **Item 3. R&D grants and contributions** awards to organizations or individuals for the conduct of R&D and intended to benefit the recipients rather than provide the program with goods, services or information. These funds are normally identical to that portion of the budgetary "grants and contributions" line object of expenditure which is devoted to R&D activities.

Grants and contributions for RSA are to be reported in the appropriate activity and performance sector spaces provided on the questionnaire.

Item 4. Research fellowships - awards to individuals for advanced research training and experience. Awards intended primarily to support the education of the recipients should be reported as "education support".

Items 5 and 11. 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 should be broken down by the type of scientific activity supported, i.e. R&D or RSA.

Items 6 and 12. Capital expenditures – expenditures on construction, acquisition or preparation of land, buildings, machinery and equipment are **capital expenditures**. All other expenditures are **current expenditures**.

II. Related scientific activities

Item 7. Scientific data collection - the gathering, processing, collating and analyzing of data on natural phenomena. These data are generally the results of surveys, routine laboratory analyses or compilations of operating records.

Data collected as part of an existing or proposed research project are charged to R&D. 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 a R&D activity.

Item 8. 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. The scientific activities of natural history museums, zoological and botanical gardens, aquaria, planitaria and nature reserves are included. Parks which are not primarily restricted reserves for certain fauna or flora are excluded.

Item 9. 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.

Item 10. 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.

Awards intended primarily to support the education of the recipients should be reported as "education support".

III. Performers

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

The intramural expenditures reported for scientific activities are those direct costs, including salaries, associated with scientific programs. The costs should include that portion of a program's contribution to employee benefit plans (e.g., superannuation) which is applicable to the scientific personnel within the program.

Non-program ("indirect") costs such as the value of services provided by other departments without charge and accommodation provided by the reporting program are to be excluded. Support services (i.e. administration, finance) provided by the reporting program, proportional to S&T expenditures should be included.

Extramural performers are groups being funded for S&T activities by the federal government sector. In this survey the extramural performers include:

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

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

Canadian non-profit institutions - charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits. Non-profit institutions primarily serving or controlled by another sector should be included in the controlling sector (e.g. FPInnovations is in the business enterprise sector).

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

Foreign performers - all foreign government agencies, foreign companies (including foreign subsidiaries of Canadian firms), international organizations, non-resident foreign nationals and Canadians studying or teaching abroad.

Other Canadian performers - include provincial research councils, and individuals or organizations in Canada not belonging to any of the above sectors.

1 A. Expenditures by activity and performer – fiscal year 2011/2012

| | Extramural | | | | | | | | |
|--|------------|------------------------|---------------------|--|--|-----------------------|---------------------------------|---------|--|
| Activity / Performer | Intramural | Business enterprise | Higher education | Canadian non-profit institutions | Provincial and municipal govern- ments | Foreign performers | Other Canadian performers | Total | |
| I. Research and experimental development (R&D) Current expenditures | (\$'000) | | | | | | | | |
| 1. In-house R&D | 1001 | | | | | | | 1002 | |
| 2. Contracts a) R&D contracts | 10C3 | 10C4 | 10C5 | 10C6 | 1007 | 10C8 | 1009 | 10C10 | |
| b) Supporting contracts | 10C11 | | | | (2) | | | 10C12 | |
| 3. R&D grants and contributions | | 10C13 | 10C14 | 10C15 | 10C16 | 10C17 | 10C18 | 10C19 | |
| 4. Research fellowships | 10020 | 10021 | 10022 | 10C23 | 10C24 | 10C25 | 10C26 | 10027 | |
| 5. Administration of extramural programs | 10C28 | | | | | | | 10029 | |
| 6. Capital expenditures | 10030 | | | | | | | 10031 | |
| I a) Sub-total Research and experimental development (R&D) | 10032 | 10033 | 10C34 | 10C35 | 10036 | 10037 | 10C38 | 10039 | |
| II. Related scientific activities (RSA) Current expenditures | 11 | | | | | | | | |
| 7. Scientific data collection | 10092 | 10093 | 10094 | 10095 | 10096 | 10097 | 10098 | 10099 | |
| 8. Information services | 10C48 | 10C49 | 10050 | 10051 | 10052 | 10C53 | 10054 | 10C55 | |
| 9. Special services and studies | 10C56 | 10057 | 10C58 | 10C59 | 10C60 | 10C61 | 10C62 | 10C63 | |
| 10. Education support | 10C64 | 10C65 | 10C66 | 10067 | 10C68 | 10C69 | 10070 | 10071 | |
| 11. Administration of extramural programs | 10C72 | | | | | | | 10C73 | |
| 12. Capital expenditures | 10C74 | | | | | | | 10C75 | |
| II a) Sub-total Related scientific activities (RSA) | 10C76 | 10C77 | 10C78 | 10C79 | 10C80 | 10C81 | 10C82 | 10C83 | |
| III. Total expenditures I a) + II a) | 10C84 | 10C85 | 10C86 | 10C87 | 10C88 | 10C89 | 10090 | 10091 1 | |

^{1.} Must equal natural science funds for 2011/2012, question 3, page 9.

1 B. Expenditures by activity and performer – fiscal year 2012/2013

| | | Extramural | | | | | | | | |
|---|------------|------------------------|---------------------|--|--|-----------------------|---------------------------------|-------|--|--|
| Activity / Performer | Intramural | Business enterprise | Higher education | Canadian non-profit institutions | Provincial and municipal govern- ments | Foreign performers | Other Canadian performers | Total | | |
| I. Research and experimental development (R&D) Current expenditures | | (\$'000) | | | | | | | | |
| 1. In-house R&D | 2001 | | | | | | | 2002 | | |
| 2. Contracts a) R&D contracts | 20C3 | 20C4 | 20C5 | 20C6 | 20C7 | 20C8 | 2009 | 20C10 | | |
| b) Supporting contracts | 20C11 | | | | (2) | | | 20C12 | | |
| 3. R&D grants and contributions | | 20C13 | 20C14 | 20C15 | 20C16 | 20C17 | 20C18 | 20C19 | | |
| 4. Research fellowships | 20C20 | 20C21 | 20022 | 20C23 | 20C24 | 20C25 | 20C26 | 20027 | | |
| 5. Administration of extramural programs | 20C28 | | | | | | | 20C29 | | |
| 6. Capital expenditures | 20030 | | | | | | | 20C31 | | |
| I a) Sub-total Research and experimental development (R&D) | 20032 | 20033 | 20034 | 20C35 | 20C36 | 20C37 | 20038 | 20C39 | | |
| II. Related scientific activities (RSA) Current expenditures | 11 | | | | | | | | | |
| 7. Scientific data collection | 20092 | 20093 | 20094 | 20095 | 20096 | 20097 | 20098 | 20099 | | |
| 8. Information services | 20C48 | 20C49 | 20C50 | 20051 | 20052 | 20053 | 20C54 | 20C55 | | |
| Special services and studies | 20056 | 20057 | 20C58 | 20059 | 20C60 | 20C61 | 20C62 | 20C63 | | |
| 10. Education support | 20C64 | 20C65 | 20C66 | 20067 | 20C68 | 20069 | 20070 | 20071 | | |
| 11. Administration of extramural programs | 20C72 | | | | | | | 20C73 | | |
| 12. Capital expenditures | 20C74 | | | | | | | 20C75 | | |
| II a) Sub-total Related scientific activities (RSA) | 20C76 | 20C77 | 20078 | 20079 | 20C80 | 20C81 | 20C82 | 20C83 | | |
| III. Total expenditures I a) + II a) | 20C84 | 20C85 | 20C86 | 20C87 | 20C88 | 20C89 | 20090 | 20C91 | | |

^{1.} Must equal natural science funds for 2012/2013, question 3, page 9.

1 C. Expenditures by activity and performer – fiscal year 2013/2014

| | | Extramural | | | | | | | | |
|---|------------|------------------------|---------------------|--|--|-----------------------|---------------------------------|---------|--|--|
| Activity / Performer | Intramural | Business enterprise | Higher education | Canadian non-profit institutions | Provincial and municipal govern- ments | Foreign performers | Other Canadian performers | Total | | |
| I. Research and experimental development (R&D) Current expenditures | | (\$'000) | | | | | | | | |
| 1. In-house R&D | 30C1 | | | | | | | 30C2 | | |
| 2. Contracts a) R&D contracts | 30C3 | 30C4 | 30C5 | 30C6 | 3007 | 30C8 | 30C9 | 30C10 | | |
| b) Supporting contracts | 30C11 | | | | | | | 30C12 | | |
| 3. R&D grants and contributions | | 30C13 | 30C14 | 30C15 | 30C16 | 30C17 | 30C18 | 30C19 | | |
| 4. Research fellowships | 30C20 | 30C21 | 30C22 | 30C23 | 30C24 | 30C25 | 30C26 | 30C27 | | |
| 5. Administration of extramural programs | 30C28 | | | 0,, | | | | 30C29 | | |
| 6. Capital expenditures | 30C30 | | | | | | | 30C31 | | |
| I a) Sub-total Research and experimental development (R&D) | 30C32 | 30C33 | 30C34 | 30C35 | 30C36 | 30C37 | 30C38 | 30C39 | | |
| II. Related scientific activities (RSA) Current expenditures | 11 | | | | | | | | | |
| 7. Scientific purpose data collection | 30C92 | 30C93 | 30C94 | 30C95 | 30C96 | 30097 | 30C98 | 30C99 | | |
| 8. Information services | 30C48 | 30C49 | 30C50 | 30C51 | 30C52 | 30C53 | 30C54 | 30C55 | | |
| 9. Special services and studies | 30C56 | 30C57 | 30C58 | 30C59 | 30C60 | 30C61 | 30C62 | 30C63 | | |
| 10. Education support | 30C64 | 30C65 | 30C66 | 30C67 | 30C68 | 30C69 | 30C70 | 30C71 | | |
| 11. Administration of extramural programs | 30C72 | | | | | | | 30C73 | | |
| 12. Capital expenditures | 30C74 | | | | | | | 30C75 | | |
| II a) Sub-total Related scientific activities (RSA) | 30C76 | 30C77 | 30C78 | 30C79 | 30C80 | 30C81 | 30C82 | 30C83 | | |
| III. Total expenditures I a) + II a) | 30C84 | 30C85 | 30C86 | 30C87 | 30C88 | 30C89 | 30C90 | 30C91 1 | | |

^{1.} Must equal natural science funds for 2013/2014, question 3, page 9.

2. PERSONNEL

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 half a year has a full-time equivalence of 0.5. Personnel data reported should be consistent with expenditures data.

Scientific and professional - people in jobs that require at least one academic degree or a 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.

2 A. Personnel in full-time equivalent for intramural scientific and technological activities in the natural sciences and engineering, fiscal years 2011/2012, 2012/2013 and 2013/2014

| | 2011/2012 | | | | | | | | | |
|---|-----------------------------|-----------------------------|--|--|-------|--|--|--|--|--|
| Category | Personnel engaged in R&D | Personnel engaged in RSA | Personnel engaged in the administration of extramural R&D programs | Personnel engaged in the administration of extramural RSA programs | Total | | | | | |
| | (A) | (B) | (C) | (D) | | | | | | |
| | | | (Full-time equivalent) | | | | | | | |
| Scientific and professional (include executive) | 40C1 | 40C2 | 40C3 | 40C4 | 4005 | | | | | |
| Technical | 40C6 | 4007 | 40C8 | 4009 | 40C10 | | | | | |
| Other ¹ | 40C11 | 40C12 | 40C13 | 40C14 | 40C15 | | | | | |
| Total | 40C16 | 40C17 | 40C18 | 40C19 | 40C20 | | | | | |

- 1. Include administrative and foreign service, administrative support, operational and military personnel.
 - A: Personnel engaged in research and development (R&D).
 - B: Personnel engaged in related scientific activities (RSA).
 - C: Personnel engaged in the administration of extramural R&D programs.
 - D: Personnel engaged in the administration of extramural RSA programs.

2 B. Personnel in full-time equivalent for intramural scientific and technological activities in the natural sciences and engineering, fiscal years 2011/2012, 2012/2013 and 2013/2014 - continued

| | | 2012/2013 | | | | | | | | |
|---|-----------------------------|-----------------------------|--|--|-------|--|--|--|--|--|
| Category | Personnel engaged in R&D | Personnel engaged in RSA | Personnel engaged in the administration of extramural R&D programs | Personnel engaged in the administration of extramural RSA programs | Total | | | | | |
| | (A) | (B) | (C) | (D) | | | | | | |
| | | | (Full-time equivalent) | | | | | | | |
| Scientific and professional (include executive) | 41C1 | 41C2 | 41C3 | 41C4 | 41C5 | | | | | |
| Technical | 41C6 | 41C7 | 41C8 | 4109 | 41C10 | | | | | |
| Other ¹ | 41C11 | 41C12 | 41C13 | 41C14 | 41C15 | | | | | |
| Total | 41C16 | 41017 | 41C18 | 41C19 | 41C20 | | | | | |

- 1. Include administrative and foreign service, administrative support, operational and military personnel.
 - A: Personnel engaged in research and development (R&D).
 - B: Personnel engaged in related scientific activities (RSA).
 - C: Personnel engaged in the administration of extramural R&D programs.
 - D: Personnel engaged in the administration of extramural RSA programs.

2 C. Personnel in full-time equivalent for intramural scientific and technological activities in the natural sciences and engineering, fiscal years 2011/2012, 2012/2013 and 2013/2014 - continued

| | 2013/2014 | | | | | | | | | |
|---|-----------|--|------------------------|--|-------|--|--|--|--|--|
| Personnel engaged in R&D Category (A) | | Personnel engaged in RSA Personnel engaged in the administration of extramural R&D programs (B) (C) | | Personnel engaged in the administration of extramural RSA programs (D) | Total | | | | | |
| | | | (Full-time equivalent) | | | | | | | |
| Scientific and professional (include executive) | 42C1 | 42C2 | 42C3 | 42C4 | 42C5 | | | | | |
| Technical | 4206 | 42C7 | 42C8 | 4209 | 42010 | | | | | |
| Other ¹ | 42C11 | 42C12 | 42C13 | 42C14 | 42C15 | | | | | |
| Total | 42C16 | 42C17 | 42C18 | 42C19 | 42C20 | | | | | |

- 1. Include administrative and foreign service, administrative support, operational and military personnel.
 - A: Personnel engaged in research and development (R&D).
 - B: Personnel engaged in related scientific activities (RSA).
 - C: Personnel engaged in the administration of extramural R&D programs.
 - D: Personnel engaged in the administration of extramural RSA programs.

3. SOURCES OF FUNDS FOR TOTAL SCIENTIFIC AND TECHNOLOGICAL ACTIVITIES

Departmental S&T budget – that portion of the total departmental budget which was spent on natural science and engineering activities.

Revenues to / from other federal departments – money transferred from this program to another federal department or money transferred into this program from another federal department for activities in the natural sciences and engineering.

Provincial government departments – all funds from the provincial government used for natural science and engineering activities. The funds are referred to as payments, contributions, transfers, etc. Also include provincial portions of federal-provincial cost sharing programs performed by the department program and identify the programs.

Business enterprises – all funds from business enterprises used for natural science and engineering activities performed by the department.

Other - all funds for natural science and engineering activities from sources not specified above.

3. Sources of funds for total scientific and technological activities in the natural sciences and engineering, fiscal years 2011/2012, 2012/2013 and 2013/2014

| Source of funds | 2011/2012 | 2012/2013 | 2013/2014 |
|--|-----------|-----------|-----------|
| | | (\$'000) | |
| Departmental S&T budget (operating and capital and grants and contributions) | 43C1 | 44C1 | 45C1 |
| Revenues to / from other federal departments ¹ a) Total transferred into this program | 43C2 | 44C2 | 45C2 |
| b) Total transferred from this program | 43C3 | 44C3 | 45C3 |
| Net other federal departments and agencies | 43C4 | 44C4 | 45C4 |
| 3. Provincial government departments | 43C5 | 44C5 | 45C5 |
| 4. Business enterprises | 43C6 | 44C6 | 45C6 |
| 5. Other (please specify) | 4307 | 44C7 | 45C7 |
| Total | 43C8 2 | 44C8 3 | 4508 4 |

^{1.} Include payments or receipts for contracts, transfers and joint programs from/to other federal government departments. The amount and the names of the origination and recipient programs should be identified on page 15.

- 2. Must equal total expenditures, question 1A, page 4.
- 3. Must equal total expenditures, question 1B, page 5.
- 4. Must equal total expenditures, question 1C, page 6.

4. SOCIO-ECONOMIC OBJECTIVES

- **1. 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 (under various headings, as appropriate) and hydrology.
- 2. Infrastructure and general planning of land use scientific activities on infrastructure and land development, including research on the construction of buildings. More generally, it covers all scientific activities relating to the general planning of land use. This includes scientific activities into protection against harmful effects in town and country planning but not scientific activities into other types of pollution (objective 3).
- **3. Control and care of the environment** scientific activities for the control of pollution, aimed at the identification and analysis of the sources of pollution and their causes, and all pollutants, including their dispersal in the environment and the effects on man, species (fauna, flora, microorganisms) and the biosphere.
- **4. Protection and improvement of human health** scientific activities aimed at protecting, promoting and restoring human health, broadly interpreted to include health aspects of nutrition and food hygiene. It ranges from preventative medicine, including all aspects of medical and surgical treatment, both for individuals and groups, and the provision of hospital and home care, to social medicine and paediatric and geriatric research.
- **5. Production, distribution and rational utilization of energy** covers scientific activities into the production, storage, transportation, distribution and rational use of all forms of energy. It also includes scientific activities on processes designed to increase the efficiency of energy production and distribution, and the study of energy conservation.
- **6. Agricultural production and technology** covers all 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 scientific activities in the field of developing food productivity and technology.
- 7. Industrial production and technology covers scientific activities on the improvement of industrial production and technology. It includes scientific activities on industrial products and their manufacturing processes except where they form an integral part of the pursuit of other objectives (e.g. defence, space, energy, agriculture).
- **8. Social structures and relationships** scientific activities on social objectives, as analysed in particular by social and human sciences, which have no obvious connection with other objectives. This analysis includes quantitative, qualitative, organizational and forecasting aspects of social problems.
- **9. Exploration and exploitation of space** all civil space scientific activities. Corresponding scientific activities in the defence field is classified in objective 12. 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).
- **10. 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.
- 11. Other civil research civil scientific activities which cannot (yet) be classified to a particular objective.
- **12. Defence** This objective covers scientific activities for military purposes. It also includes basic research and nuclear and space research financed by ministries of defence. Civil scientific activities financed by ministries of defence, for example, in the fields of meteorology, telecommunications and health, should be classified in the relevant objectives.

4. Scientific and technological expenditures by socio-economic objective - fiscal year 2011/2012

| | R | &D | R | SA | Total S&T | |
|--|------------|------------|------------|------------|------------|------------|
| Socio-economic objective | Intramural | Extramural | Intramural | Extramural | Intramural | Extramural |
| | | • | (\$'(| 000) | • | |
| Exploration and exploitation of the Earth | 50C1 | 50C2 | 50C3 | 50C4 | 50C5 | 50C6 |
| Infrastructure and general planning of land use: 2.1 Transport | 50C7 | 50C8 | 5009 | 50C10 | 50C11 | 50C12 |
| 2.2 Telecommunication | 50C13 | 50C14 | 50C15 | 50C16 | 50C17 | 50C18 |
| 2.3 Other | 50C19 | 50C20 | 50C21 | 50C22 | 50C23 | 50C24 |
| 3. Control and care of the environment | 50C25 | 50C26 | 50C27 | 50C28 | 50C29 | 50C30 |
| 4. Protection and improvement of human health | 50C31 | 50C32 | 50C33 | 50C34 | 50C35 | 50C36 |
| Production, distribution and rational utilization of energy | 50C37 | 50C38 | 50C39 | 50C40 | 50C41 | 50C42 |
| Agricultural production and technology: 6.1 Agriculture | 50C43 | 50C44 | 50C45 | 50C46 | 50C47 | 50C48 |
| 6.2 Fishing | 50C49 | 50C50 | 50C51 | 50C52 | 50C53 | 50C54 |
| 6.3 Forestry | 50C55 | 50C56 | 50C57 | 50C58 | 50C59 | 50C60 |
| 7. Industrial production and technology | 50C61 | 50C62 | 50C63 | 50C64 | 50C65 | 50C66 |
| 8. Social structures and relationships | 50C67 | 50C68 | 50C69 | 50C70 | 50C71 | 50C72 |
| 9. Exploration and exploitation of space | 50C73 | 50C74 | 50C75 | 50C76 | 50C77 | 50C78 |
| 10. Non-oriented research | 50C79 | 50C80 | 50C81 | 50C82 | 50C83 | 50C84 |
| 11. Other civil research | 50C85 | 50C86 | 50C87 | 50C88 | 50C89 | 50C90 |
| 12. Defence | 50C91 | 50C92 | 50C93 | 50C94 | 50C95 | 50C96 |
| Total Expenditures | 50C97 1 | 50C98 2 | 50C99 3 | 50C100 4 | 50C101 5 | 50C102 6 |

^{1.} Must equal intramural R&D expenditures reported for 2011/2012, question 1A, page 4.

^{2.} Must equal extramural R&D expenditures reported for 2011/2012, question 1A, page 4.

^{3.} Must equal intramural RSA expenditures reported for 2011/2012, question 1A, page 4.

^{4.} Must equal extramural RSA expenditures reported for 2011/2012, question 1A, page 4.

^{5.} Must equal total intramural S&T expenditures reported for 2011/2012, question 1A, page 4.

^{6.} Must equal total extramural S&T expenditures reported for 2011/2012, question 1A, page 4.

5. EXPENDITURES AND PERSONNEL OF SCIENTIFIC AND TECHNOLOGICAL ESTABLISHMENTS ENGAGED IN ACTIVITIES IN THE NATURAL SCIENCES AND ENGINEERING, BY REGION

Since 1978, Statistics Canada has been collecting detailed expenditure and personnel data on intramural scientific activities of federal government departments and agencies by region. These data, coupled with data from other surveys, have been used by policy planners in federal and provincial governments, research managers and the media to assess the provincial distribution of science activities in Canada.

Again this year, we are asking for the information at the regional level. We are also asking for information in both natural science establishments as well as those performing activities in the social sciences, as international gross domestic expenditures on research and development (GERD) statistics include activities in both science fields.

The Canada total expenditures and personnel reported for the actual year (page 13), must be consistent with data reported on intramural expenditures, in question 1A, page 4, column 1 and total personnel, in question 2A, page 7.

| Page 13, Question 5 | Must equal | Page 4, Question 1A, Column 1 |
|--|------------|--|
| Column 1 Total - Current intramural R&D expenditures | = | Sum of rows 1 through 5 |
| Column 2 Total - Capital R&D expenditures | = | Item 6 |
| Column 3 Total - Current intramural RSA expenditures | = 1 | Sum of rows 7 through 11 |
| Column 4 Total - Capital RSA expenditures | | Item 12 |
| Page 13, Question 5 | Must equal | Page 7, Question 2A |
| Column 5 Total - Scientific and professional R&D personnel | = | Scientific and professional of columns A and C |
| Column 6 Total - Total R&D Personnel | = | Total of columns A and C |
| Column 7 Total - Scientific and professional RSA personnel | = | Scientific and professional of columns B and D |
| Column 8 Total - Total RSA personnel | = | Total of columns B and D |

5. Expenditures and personnel of scientific and technological establishments engaged in activities in the natural sciences and engineering, fiscal year 2011/2012

| | Total intra | mural R&D | Total intramural RSA | | Total R&D personnel | | Total RSA personnel | |
|--|-------------|-----------|----------------------|---------|---------------------------|------------|---------------------------|--------|
| Region | Current | Capital | Current | Capital | Scientific & professional | Total | Scientific & professional | Total |
| | | (\$'0 | 000) | • | | (Full-time | equivalent) | • |
| Newfoundland and Labrador | 60C1 | 60C2 | 60C3 | 60C4 | 60C5 | 60C6 | 60C7 | 60C8 |
| Prince Edward Island | 60C9 | 60C10 | 60C11 | 60C12 | 60C13 | 60C14 | 60C15 | 60C16 |
| Nova Scotia | 60C17 | 60C18 | 60C19 | 60C20 | 60C21 | 60C22 | 60C23 | 60C24 |
| New Brunswick | 60C25 | 60C26 | 60C27 | 60C28 | 60C29 | 60C30 | 60C31 | 60C32 |
| Quebec (excl. NCR - Quebec) | 60C129 | 60C130 | 60C131 | 60C132 | 60C133 | 60C134 | 60C135 | 60C136 |
| National Capital Region (NCR) (Quebec) | 60C41 | 60C42 | 60C43 | 60C44 | 60C45 | 60C46 | 60C47 | 60C48 |
| Ontario (excl. NCR - Ontario) | 60C137 | 60C138 | 60C139 | 60C140 | 60C141 | 60C142 | 60C143 | 60C144 |
| National Capital Region (NCR) (Ontario) | 60C65 | 60C66 | 60C67 | 60C68 | 60C69 | 60C70 | 60C71 | 60C72 |
| Manitoba | 60C81 | 60C82 | 60C83 | 60C84 | 60C85 | 60C86 | 60C87 | 60C88 |
| Saskatchewan | 60C89 | 60C90 | 60C91 | 60C92 | 60C93 | 60C94 | 60C95 | 60096 |
| Alberta | 60C97 | 60C98 | 60C99 | 60C100 | 60C101 | 60C102 | 60C103 | 60C104 |
| British Columbia | 60C105 | 60C106 | 60C107 | 60C108 | 60C109 | 60C110 | 60C111 | 60C112 |
| Yukon, Northwest Territories and Nunavut | 60C113 | 60C114 | 60C115 | 60C116 | 60C117 | 60C118 | 60C119 | 60C120 |
| Canada Total ¹ | 60C121 | 60C122 | 60C123 | 60C124 | 60C125 | 60C126 | 60C127 | 60C128 |

^{1.} Must equal total intramural expenditures and personnel, question 1A and question 2A, for year 2011/2012.

Areas covered in the National Capital Region Quebec and Ontario:

Alcove (QC) Almonte (ON) Angers (QC) Antrim (ON) Appleton (ON) Ashton (ON) Aylmer (QC) Barrhaven (ON) Baxters Corner (ON) Bearbrook (ON) Beech Grove (QC) Bells Corners (ON) Blackburn Hamlet (ON) Blakeney (ON) Breckenridge (QC) Brisson (ON) Buckingham (QC) Burnet (QC) Cantley (QC) Carlsbad Springs (ON) Carp (ON) Carsonby (ON)

Carp (ON)
Carsonby (ON)
Cascades (QC)
Chelsea (QC)
Constance Bay (ON)
Corkery (ON)
Cousineau (QC)
Cumberland (ON)

Dalmeny (ON)

Davidson Corner (QC)

Deschênes (QC)
Dirleton (ON)
Duclos (QC)
Dunrobin (ON)
Dwyer Hill (ON)
Eardley (QC)
Edwards (ON)
Elm (ON)
Embrun (ON)
Fallowfield (ON)
Farm Point (QC)
Fitzroy Harbour (C)
French Hill (ON)
Galetta (ON)

Farm Point (QC)
Fitzroy Harbour (ON)
French Hill (ON)
Galetta (ON)
Gatineau (QC)
Glen Almond (QC)
Glencairn (ON)
Gleneagle (QC)
Gloucester (ON)
Greely (ON)
Halverson (QC)
Harwood Plains (ON)
Hazeldean (ON)
Herbert Corners (ON)
Heyworth (QC)
Holland Mills (QC)

Hull (QC)

Huntley (ON)

Ironside (QC)

Jeanne-d'Arc (QC)

Jockvale (ON) Johnston Corners (ON) Kanata (ON) Kars (ON) Kenmore (ON) Kilmaurs (ON) Kinburn (ON) Kirks Ferry (QC) La Pêche (QC) Lac-des-Loups (QC) Lac-McGregor (QC) Lascelles (QC) Larrimac (QC) Leitrim (ON) Leonard (ON) Limbour (QC) Lucerne (QC) Luskville (QC) MacLarens Landing (ON) Malwood (ON) Manion Corners (ON) Manotick (ON)

Manotick (ON)
Mansfield (ON)
Marathon (ON)
Marchhurst (ON)
Marvelville (ON)
Masson (QC)
Merivale (ON)
Metcalfe (ON)
Mohr Corners (ON)

Munster (ON) Navan (ON) Nepean (ON) North Gower (ON) North Onslow (QC) Old Chelsea (QC) Onslow Corners (QC) Orléans (ON) Osgoode (ON) Ottawa (ON) Pakenham (ON) Pamure (ON) Patterson (QC) Perkins (QC) Pointe-Gatineau (QC) Poltimore (QC) Poupore (QC) Quinnville (QC) Quyon (QC) Ramsayville (ON) Reevecraig (ON) Ribot (QC) Richmond (ON) Rideau (ON) Rupert (QC) Russell (ON) Ruthledge (QC)

Masham (QC) St-Louis-de-Masham (QC)

St-François-de-

St-Onge (QC)
St-Pierre-deWakefield (QC)
Ste-Cécile-de
Masham (QC)
Sarsfield (ON)
Shirley's Bay (ON)
South Gloucester (ON)
South March (ON)
Spring Hill (ON)
Stapledon (ON)
Stanley Corners (ON)
Steel (QC)

Stittsville (ON)
Strathearn (ON)
Tenaga (QC)
Twin Elm (ON)
Val-des Monts (QC)
Val-du-Lac (QC)
Val-Paquin (QC)
Vanier (ON)
Vars (ON)
Wakefield (QC)

Watterson Corners (ON) Wilson's Corners (ON) Woodlawn (ON) Woodridge (ON) Wyman (QC)

6. TRANSFERS FOR NATURAL SCIENCE AND ENGINEERING ACTIVITIES

Include payments or recipients for contracts, transfers and joint programs from / to other federal government departments. Please identify the amount and names of the origination and recipient programs.

6. Transfers for natural science and engineering activities – fiscal year 2011/2012

| Into the program¹ | | | | | | | |
|-----------------------------------|-------------|-----------------------|--|--|--|--|--|
| From Federal department or agency | Description | 2011/2012 (\$'000) | | | | | |
| 7001 | 7002 | 70C3 | | | | | |
| 70C1 | 70C2 | 7003 | | | | | |
| 7001 | 70C2 | 7003 | | | | | |
| 7001 | 70C2 | 70C3 | | | | | |
| Total | | | | | | | |

^{1.} Must equal total transferred into this program reported for 2011/2012, question 3, column 1, row 2 a), page 9.

| From the program¹ | | | | | | | |
|---------------------------------|-------------|-----------------------|--|--|--|--|--|
| To Federal department or agency | Description | 2011/2012 (\$'000) | | | | | |
| 7101 | 71C2 | 7103 | | | | | |
| 7101 | 7102 | 71C3 | | | | | |
| 7101 | 71C2 | 71C3 | | | | | |
| 7101 | 7102 | 71C3 | | | | | |
| Total | | | | | | | |

^{1.} Must equal total transferred from this program reported for 2011/2012, question 3, column 1, row 2 b), page 9.

PAYMENTS TO EXTRAMURAL PERFORMERS FOR SCIENTIFIC ACTIVITIES, FISCAL YEAR 2011/2012

Departments and agencies of the federal government are asked to identify the recipients of their scientific payments.

We are requesting a detailed listing of the recipients of federal payments made in connection with a scientific activity.

Expenditures reported on this submission should be equal to the 2011/2012 extramural expenditures, by sector and activity, reported on the 2013/2014 Federal science expenditures and personnel (FSEP) questionnaire.

Please provide us with a list of 2011/2012 science payments, including:

- (1) name and address of the organization or individual receiving the payment;
- (2) field of science: social or natural;
- (3) type of payment: contract or grant / contribution;
- (4) activity carried out by the performer: research and experimental development (R&D) or related scientific activity (RSA);
- (5) performing sectors: business enterprise, higher education, Canadian non-profit institutions, provincial and municipal governments, foreign performers, other Canadian performers;
- (6) amount in (\$'000); Please see note (1) of guidelines on next page;
- (7) business number.

| A suggested format is given below: | | | | | | | | | | | |
|------------------------------------|----------------------|-----------|----------|----------------|---------|-----------------|----------|------------------------|--------------------|--------------------|--|
| Name | Street | City | Province | Postal Code | Science | Payment Type | Activity | Performer | Amount ('000\$) | Business Number | |
| XXX Company Limited | 123 First Street | Regina | SK | S5R 6R8 | Natural | Contract | R&D | Business Enterprise | 123 | 000000000 | |
| YYY Company Limited | 345 Second Street | Vancouver | ВС | V5T 2T5 | Natural | Grant | R&D | Business Enterprise | 350 | 000000000 | |

Business number

Canada Revenue Agency has launched a number of initiatives to streamline the administrative work required of small businesses. The new Business Number allows businesses to use a single number for all Canada Revenue Agency accounts. This is enhanced by the Business Window, organized to handle registration and provide information for all Canada Revenue Agency programs at a single location.

Lists containing the required data in some other format including Excel® format or paper are acceptable.

For further clarification of terms and definitions, please refer to the enclosed guide.

This information is collected in collaboration with Industry Canada under Section 12 of the Statistics Act which states:

"The Minister may enter into an agreement with any department or municipal or other corporation for the sharing of information collected from a respondent by either Statistics Canada or the department or corporation on behalf of both of them and for the subsequent tabulation or publication based on that information."

Included in this section of the act is the following provision:

The agreement shall not apply in respect to "the respondent who gives notice in writing to the Chief Statistician that the respondent objects to the sharing of the information by Statistics Canada, the information not be shared with the department or corporation unless the department or corporation is authorized by law to require the respondent to provide that information."

Statistics Canada and Industry Canada have such an agreement for sharing information gathered in this exercise. The joint agreement shall not apply to data provided by a department or agency which has given the required notice to the office of the Chief Statistician.

When such notice has been given, such specified data will be held by Statistics Canada alone, as provided for in the "Statistics Act". Industry Canada and Statistics Canada will maintain as confidential, data obtained under this agreement.

SOME GUIDELINES:

(1) Small contracts

Special attention should be given to contracts under \$25,000. It has been found that the majority of these contracts is for services or in support of in-house research projects, (i.e. does not qualify as an extramural payment).

Support or service contracts should not be included with extramural payments. They are defined as contracts to an outside institution or individual to provide goods or services necessary to support in-house R&D programs and should be reported intramurally as supporting contracts in this questionnaire. Examples are contracts with data processing firms for computing services, maintenance contracts for R&D facilities, or procurement contracts for specialized equipment which is not considered capital.

R&D contracts of less than \$25,000 can be aggregated and reported by science, activity and payment type, region and performing sector.

(2) Recipients of payments to be classified as "other Canadian performers"

Grants to universities on behalf of individuals can be included with the institution in the "Higher education" sector, while those made directly to the student without any indicated university affiliation should be included with "other Canadian performers".

Payments to Provincial Research Organizations or Councils should always be included with "other Canadian performers".

(3) Discrepancies

Reasons for large discrepancies in expenditures reported on this form and the actual year in the 2013/2014 federal science expenditures and personnel questionnaire should be explained in your covering letter.

General information

Confidentiality

Statistics Canada is prohibited by law from releasing any information it collects which could identify any person, business, or organization, unless consent has been given by the respondent or as permitted by the *Statistics Act*. The confidentiality provisions of the *Statistics Act* are not affected by either the *Access to Information Act* or any other legislation. Therefore, for example, the Canada Revenue Agency cannot access identifiable survey records from Statistics Canada.

Information from this survey will be used for statistical purposes only and will be published in aggregate form only.

Data-sharing agreements

To reduce respondent burden, Statistics Canada has entered into data-sharing agreements with provincial and territorial statistical agencies and other government organizations, which must keep the data confidential and use them only for statistical purposes. Statistics Canada will only share data from this survey with those organizations that have demonstrated a requirement to use the data.

Section 11 of the *Statistics Act* provides for the sharing of information with provincial and territorial statistical agencies that meet certain conditions. These agencies must have the legislative authority to collect the same information, on a mandatory basis, and the legislation must provide substantially the same provisions for confidentiality and penalties for disclosure of confidential information as the *Statistics Act*. Because these agencies have the legal authority to compel businesses to provide the same information, consent is not requested and businesses may not object to the sharing of the data.

For this survey, there are Section 11 agreements with the provincial and territorial statistical agencies of Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, and the Yukon.

The shared data will be limited to information pertaining to federal departments and agencies located within the jurisdiction of the respective province or territory.

Section 12 of the *Statistics Act* provides for the sharing of information with federal, provincial or territorial government organizations. Under Section 12, you may refuse to share your information with any of these organizations by writing a letter of objection to the Chief Statistician and returning it with the completed questionnaire. Please specify the organizations with which you do not want to share your data.

For this survey, there are Section 12 agreements with the statistical agencies of Prince Edward Island, the Northwest Territories and Nunavut as well as with Industry Canada.

The shared data will be limited to information pertaining to federal departments and agencies located within the jurisdiction of the respective province or territory.

Record linkages

To enhance the data from this survey, Statistics Canada may combine it with information from other surveys or from administrative sources.

Please forward the completed questionnaire and listing of extramural performers by January 11, 2013 directly to:

Operations and Integration Division, Statistics Canada

2nd Floor, Section B-17, Jean Talon Building, 150 Tunney's Pasture Driveway, Ottawa, Ontario, K1A 0T6

Phone Number: 613-951-2591 or toll free at 1-800-387-0479 Fax number: 613-951-0709 or toll free at 1-800-755-5514

Email: infotechsurv@statcan.gc.ca

Your participation is greatly appreciated and will contribute to providing useful information on federal S&T expenditures. We plan to release the first results from this survey in the summer of 2013. You will be able to access these results through *The Daily*, the publication *Federal Scientific Activities*, catalogue no 88-204-X and CANSIM tables 358-0142 to 358-0151 on Statistics Canada's web site. The data will also be available on Science.gc.ca. **THANK YOU FOR YOUR CO-OPERATION**.