

Federal government spending on science and technology, 2020/2021

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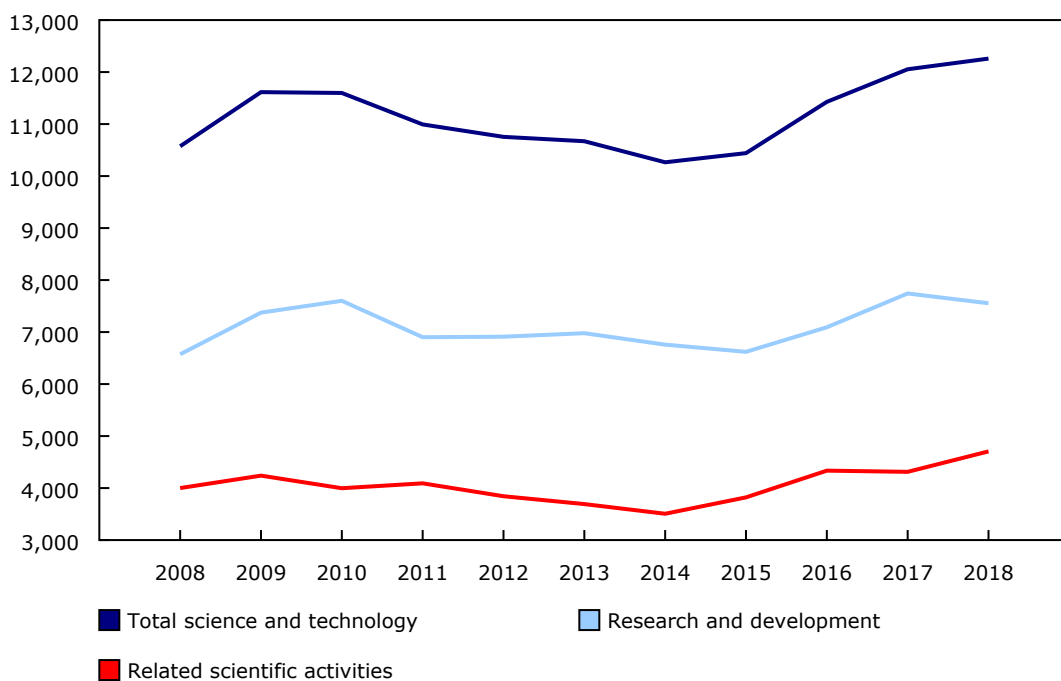
Federal government spending on science and technology increases for fourth consecutive year

Federal government spending on science and technology (S&T) in Canada reached \$12.3 billion in 2018/2019, an increase of 1.7% from the previous year. S&T spending has increased consistently since 2015/2016, following five consecutive years of decreases.

S&T includes two components: research and development (R&D), and related scientific activities (RSA, see note to readers for definition). R&D spending accounted for 61.6% of all spending, despite decreasing 2.4% to \$7.6 billion in 2018/2019. By contrast, RSA spending rose 9.1% to \$4.7 billion.

Chart 1
Science and technology expenditures by type of activity (2008 to 2018)

millions of dollars



Source(s): Table 27-10-0006-01.

Overall federal in-house spending increases for third consecutive year

Compared with 2017/2018, spending on S&T activities conducted within the federal government (called intramural or in-house spending) increased by \$138 million to \$5.5 billion, representing 45.1% of all S&T spending. This is the third consecutive year of in-house S&T spending growth.



In-house R&D spending increased \$122 million—driven primarily by an additional \$95 million in spending by the National Research Council of Canada. Agriculture and Agri-Food Canada and the Department of National Defence (DND) were the second and third largest R&D spenders, respectively. Combined, these three organizations accounted for 62.9% of total federal government intramural R&D spending in 2018/2019.

In-house RSA spending, which increased for the fourth consecutive year, rose \$16 million in 2018/2019. This was primarily the result of a \$103 million increase in spending by DND, which offset a more generalized decrease in spending by other departments and agencies.

Increase in federal payments to external science and technology performers

Compared with the previous year, federal government payments to external—or extramural—performers of S&T in all other sectors increased by 1.0% to \$6.7 billion. The higher education sector received the most funding (\$3.8 billion). The overall rise in payments represents the fourth consecutive annual increase in extramural S&T payments.

The growth in payments was attributable to an increase in external RSA activities, which offset declines in external R&D payments. External RSA activities rose 33.4% to \$1.5 billion in 2018/2019. This marks the first time since 1999/2000 that all RSA recipient sectors saw an increase in their federal funding.

In contrast, federal government R&D spending on external R&D activities decreased 5.6% to \$5.2 billion. This decline was attributable to spending decreases to the provincial and municipal governments (-\$418 million), business enterprise (-\$222 million), and foreign performers (-\$9 million) sectors.

Slight increase in federal personnel engaged in science and technology activities

The number of full-time equivalent (FTE) federal government S&T personnel increased for the third consecutive year to 36,902 in 2018/2019, a 1.6% year-over-year increase (+585 FTEs). This gain was brought on by an increase of FTEs at Health Canada (+266 FTEs) and Fisheries and Oceans Canada (+151 FTEs).

Federal government spending intentions on science and technology expected to decline

Although the intentions data in this release were collected well before the onset of COVID-19, they will serve as an important benchmark to measure the full effect of the pandemic on the Canadian economy.

Prior to the COVID-19 pandemic, the federal government intended to spend \$12.7 billion on S&T in 2020/2021, which is similar to the preliminary 2019/2020 data.

Note to readers

The Federal Science Expenditures and Personnel survey, *Activities in the Social Sciences and Natural Sciences*, is an annual survey of all federal government departments and agencies that perform or fund science and technology activities. Actual data for 2018/2019, preliminary data for 2019/2020 and intentions for 2020/2021 were collected from August 15 to November 30, 2019, based on the federal government's fiscal year running from April 1 to March 31.

Science and technology activities comprise two types of scientific activities: research and development, and related scientific activities. They can be defined as all systematic activities directly related to the generation, advancement, dissemination and application of scientific and technical knowledge in all fields of science and technology.

Research and development comprises creative and systematic work done to increase the stock of knowledge—including knowledge of humankind, culture and society—and devise new applications of available knowledge.

Related scientific activities are all systematic activities directly related to the generation, advancement, dissemination and application of scientific and technological knowledge.

Natural sciences and engineering consist of all disciplines concerned with understanding, exploring, developing or using the natural world. Included are engineering, technology, mathematics, computer and information sciences, physical sciences, medical and health sciences, agricultural sciences, veterinary sciences, and forestry.

Social sciences, humanities and the arts consists of disciplines concerned with the study of human actions and conditions and the social, economic and institutional mechanisms that affect humans. Included are the arts, economics and business, education, history and archeology, law, languages and linguistics, media and communications, philosophy, ethics and religion, psychology and cognitive sciences, social and economic geography, and sociology.

Full-time equivalent is the personnel expressed as a ratio of working hours actually spent on scientific activities during a specific reference period divided by the total number of hours conventionally worked in the same period by an individual or a group. For example, an employee who is engaged in scientific activities for half a year has a full-time equivalence of 0.5.

Scientific and professional personnel (also called researchers) are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, models and methods. Managers and administrators who plan and manage the scientific and technical aspects of a researcher's work, as well as graduate students, are also included.

Technical personnel perform scientific and technical tasks involving the application of concepts and operational methods in one or more fields of the natural sciences and engineering, or of the social sciences, humanities and the arts, normally under the supervision of researchers.

Other personnel (also called support staff) includes skilled and unskilled workers, as well as administrative, secretarial and clerical staff directly associated with research and development projects.

More information on the concepts and definitions of the survey (4212) is available from this release's Related information tab.

Available tables: [27-10-0005-01](#) to [27-10-0014-01](#) and [27-10-0026-01](#) to [27-10-0029-01](#) .

Definitions, data sources and methods: survey number [4212](#).

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca) or Media Relations (613-951-4636; STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca).