

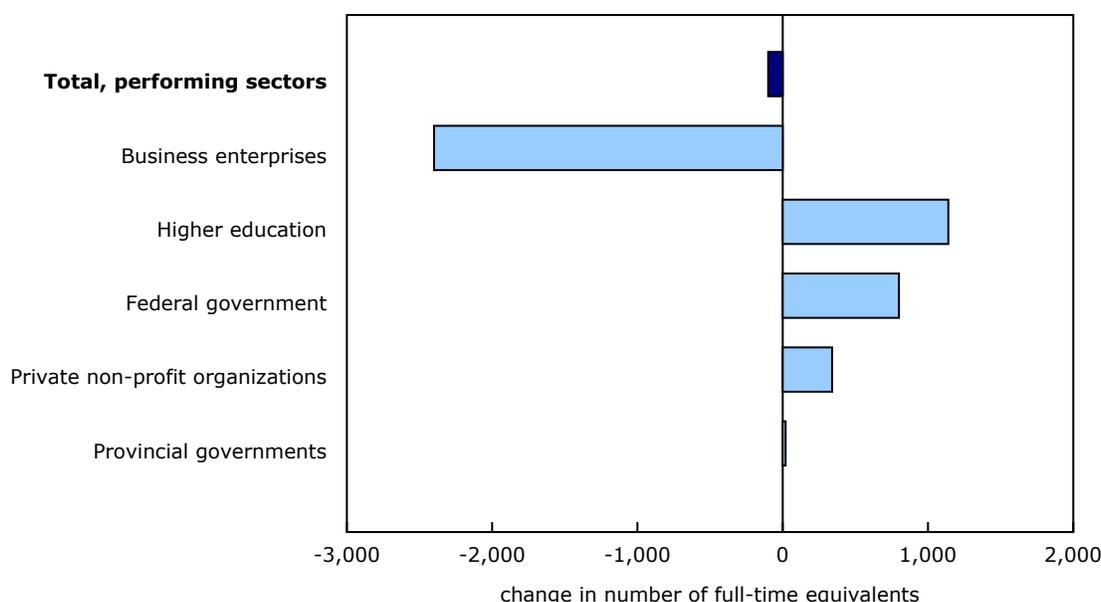
# Research and development personnel, 2017

Released at 8:30 a.m. Eastern time in *The Daily*, Tuesday, March 3, 2020

The number of research and development (R&D) personnel in Canada was virtually unchanged in 2017, at 235,350 full-time equivalents (FTEs), a marginal decline of 100 FTEs compared with the previous year. Underlying these results, however, was a larger decline in the business enterprise sector, which was offset by growth in the higher education, federal government and private non-profit sectors.

While the business enterprise sector experienced a decline in R&D personnel for the second consecutive year, the federal government sector experienced its first year-over-year growth in R&D personnel since 2009.

**Chart 1**  
**Contributions to change in research and development personnel, by performing sector, 2016 to 2017**



Source(s): Table 27-10-0022-01.

Across all performing sectors, technicians (+2.6%) were the only occupational category that saw gains in 2017. The remaining R&D occupations saw declines: researchers (-0.1%), support staff (-2.1%) and on-site research consultants (-9.9%). Losses were mostly observed in the business enterprise sector.

## Businesses account for the largest share of research and development personnel, despite their year-over-year decline

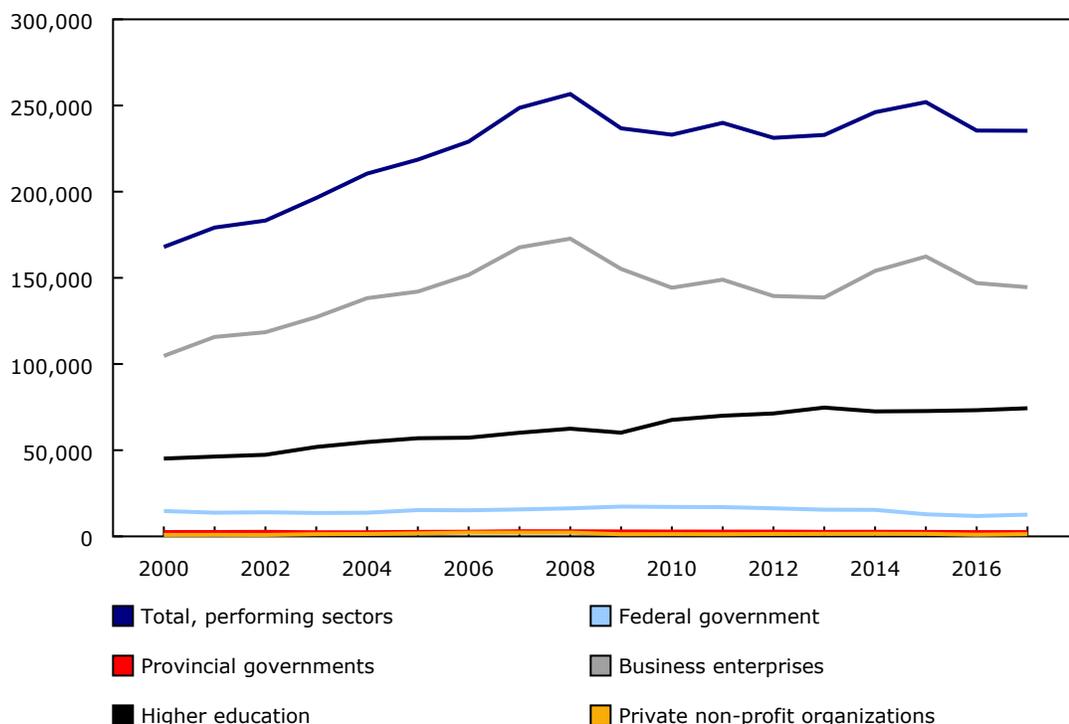
The number of personnel engaged in R&D in the business enterprise sector fell for a second consecutive year in 2017, down 1.6% to 144,570 FTEs. As a result, the business enterprise sector's share of Canada's R&D personnel (which encompasses all five performing sectors) edged down from 62.4% in 2016 to 61.4% in 2017.

Within the business enterprise sector, the drop in personnel was attributable to declines in researchers (-1,710 FTEs), on-site research consultants (-770 FTEs) and support staff (-670 FTEs). The overall decrease was partially offset by an increase in technicians (+750 FTEs).



**Chart 2**  
**Total research and development personnel, by performing sector, 2000 to 2017**

number of full-time equivalents



Source(s): Table 27-10-0022-01.

### Higher education sector shows largest growth

In 2017, the largest growth in R&D personnel came from higher education, which grew by 1,140 FTEs to 74,350 FTEs.

Higher education was the only performing sector to see overall growth in R&D personnel at the end of the 10-year period from 2008 to 2017. This led to its share of Canada's total R&D personnel increasing from 24.3% in 2008 to 31.6% in 2017.

### First increase in federal government research and development personnel since 2009

After seven consecutive years of decline, R&D personnel in the federal government sector grew 6.8% to 12,610 FTEs in 2017. The increase was the result of more R&D researchers (+520 FTEs) and support staff (+210 FTEs) in several departments and agencies, including Natural Resources Canada, Environment and Climate Change Canada, Statistics Canada, and the Department of National Defence.

As a result of this growth, the federal government employed 5.4% of Canada's R&D personnel in 2017, up from 5.0% in 2016.

## Sustainable Development Goals

On January 1, 2016, the world officially began implementation of the [2030 Agenda for Sustainable Development](#)—the United Nations' transformative plan of action that addresses urgent global challenges over the next 15 years. The plan is based on 17 specific sustainable development goals.

Data on research and development personnel are an example of how Statistics Canada supports the reporting on the Global Goals for Sustainable Development. This release will be used in helping to measure the following goal:



### Note to readers

Research and development (R&D) personnel counts are rounded to the nearest 10 and reported as full-time equivalents. **Full-time equivalent** is a measure of the time actually devoted to R&D. An employee who is engaged in R&D for half a year has a full-time equivalence of 0.5.

R&D personnel encompass a variety of occupations that are classified into three categories according to their R&D function (Frascati Manual 2015): researchers, technicians and support staff.

**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.

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

**Support staff** includes skilled and unskilled craftsmen, and administrative, secretarial and clerical staff directly associated with R&D projects.

On-site research consultants represent self-employed individuals or contractors who are working on the site of the R&D performer and contribute to their intramural R&D. While on-site research consultants are not considered part of the performer's intramural R&D personnel, the Organisation for Economic Co-operation and Development has directed countries to include these consultants as part of total R&D personnel.

Beginning with 2014 data, the business enterprise R&D sector's statistical program concepts and methodology were redesigned. Users should therefore exercise caution when comparing data from 2014 onwards with historical datasets. Documentation on this methodology can be found on the [Research and Development in Canadian Industry](#) (changes to the survey for reference year 2014) page of our website.

There are five performing sectors in Canada's R&D personnel release: business enterprise, private non-profit, higher education, federal government and provincial government (which includes provincial research organizations).

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**Available tables:** [27-10-0022-01](#) and [27-10-0023-01](#).

**Definitions, data sources and methods:** survey number [5193](#).

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](mailto:STATCAN.infostats-infostats.STATCAN@canada.ca)) or Media Relations (613-951-4636; [STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca](mailto:STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca)).