

# Research and development personnel, 2018

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The number of research and development (R&D) personnel in Canada rose 2.8% in 2018 to 244,450 full-time equivalents (FTEs). This was the second consecutive year in which the number of R&D personnel rose.

The year 2018 also marks the first time since 2008 that all occupational categories, including on-site research consultants (introduced to the survey in 2014), rose on a year-over-year basis. Leading the charge was an increase in the number of researchers, whose levels rose by 3.1% to 167,440 FTEs.

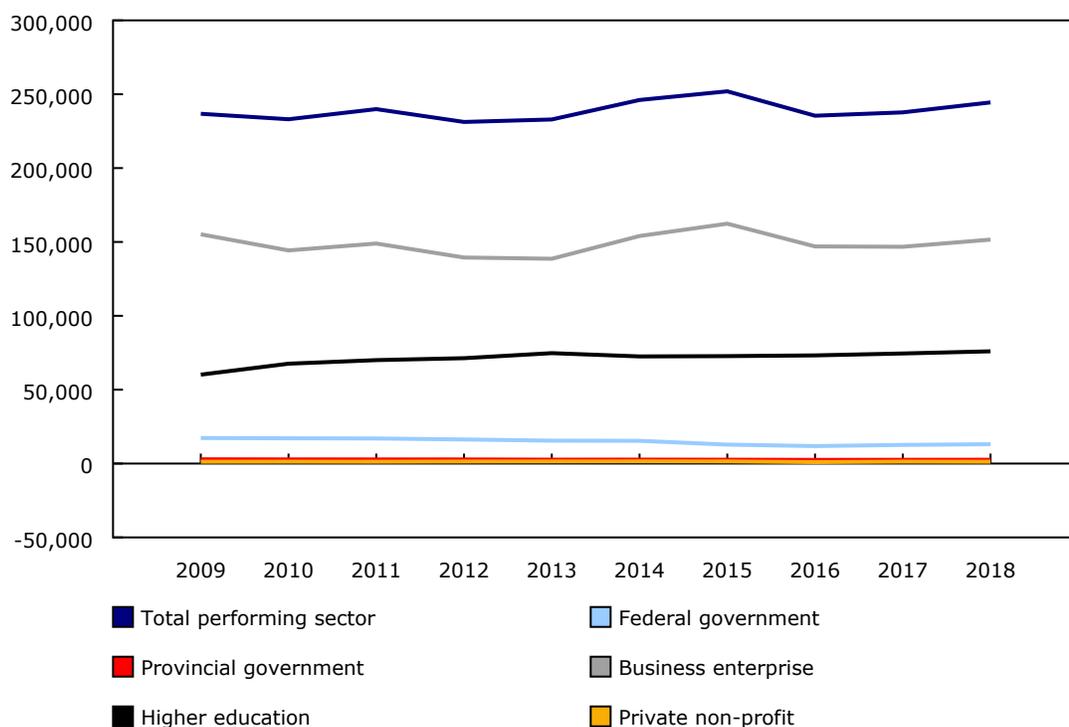
## Businesses continued to account for the largest share of R&D personnel in Canada

The business enterprise sector's total R&D personnel rose 3.3% in 2018 to 151,570 FTEs, following two consecutive annual decreases. This growth was driven by increases in the number of researchers and, to a lesser extent, on-site research consultants, despite marginal decreases in technicians and support staff. As a result, businesses employed 62.0% of Canada's total R&D personnel, followed by the higher education sector at 31.1% (75,970 FTEs), the federal government at 5.4% (13,080 FTEs), provincial governments at 1.1% (2,580 FTEs), and the private non-profit sector at 0.5% (1,240 FTEs).

### Chart 1

#### Total research and development personnel, by performing sector, 2009 to 2018

Full-time equivalents



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

The number of R&D personnel employed in the higher education sector increased to record levels in 2018 (75,970 FTEs). This marked the fourth consecutive year of growth and was the result of increased employment in all occupational categories. Excluding a drop of 2,020 FTEs in 2014, the higher education sector has trended upwards from its 2009 level of 60,180 FTEs.



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## Businesses reported the largest increase in researchers

Researchers constituted the largest category of total R&D personnel in 2018, 68.5% of the total, or 167,440 FTEs. Businesses led all other sectors in increasing the number of researchers employed, growing 4.5% over the level in 2017 to 97,730 FTEs. This was followed by the higher education sector, where the number of researchers increased by 1.8% to 61,430 FTEs. Provincial government researcher employment remained relatively stable from the prior year, but the federal government and private non-profit sectors both experienced declines of 3.7% (or 240 FTEs) and 9.5% (or 60 FTEs) respectively.

The number of on-site research consultants also rose in 2018, reaching 6,390 FTEs (+12.9%). This was the first growth in this sector since its inclusion in 2014, and was driven by the business enterprise sector, which increased by 770 FTEs (+13.9%).

## The federal government added more support staff than all other sectors combined

The federal government reported its second consecutive increase in overall R&D personnel in 2018; however, unlike other sectors, the federal government's growth in R&D personnel was based solely on increased support staff and technicians, rising 18.2% (or 560 FTEs) and 4.7% (or 140 FTEs), respectively. The increase in support staff was the largest of any sector and the federal government was the only sector to employ more support staff than technicians.

### 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).

**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)).