



Council of Canadian Academies  
Conseil des académies canadiennes

# Canada remains strong in research output and impact, capacity for R&D and innovation at risk: New expert panel report

## News Release

April 10, 2018 – Ottawa, ON

A new expert panel report, released today by the Council of Canadian Academies (CCA), provides the latest data and information on Canada's track record in fundamental research, applied research and experimental development, industrial R&D, and the relationship of these research efforts to wealth creation and prosperity through innovation.

The report underscores that while Canada benefits from high levels of educational attainment, is a leading global contributor to research, and has significant areas of research strength, other countries are outpacing Canada in terms of R&D investment, ultimately putting the country's prosperity at risk.

R&D investment as a share of GDP has declined steadily since 2001. Canada now stands well behind the OECD average, and is ranked 33<sup>rd</sup> out of 40 countries on an index of business R&D investment, intensity, and growth. The most pressing concern is low R&D spending in Canadian industry, but growth in government and higher education R&D is now also falling behind those of other leading nations.

While Canada is a highly innovative country, with a robust research base and thriving communities of technology start-ups, significant barriers — such as a lack of managerial skills, the experience needed to scale-up companies, and foreign acquisition of high-tech firms — often prevent the translation of innovation into wealth creation. The result is a deficit of technology companies growing to scale in Canada, and a loss of associated economic and social benefits. This risks establishing a vicious cycle, where successful companies seek growth opportunities elsewhere due to a lack of critical skills and experience in Canada guiding companies through periods of rapid expansion.

Despite poor overall performance, the Panel found that Canada does have notable pockets of industrial R&D strength, particularly in scientific research and development services, computer systems design, communications equipment manufacturing, and aerospace products and parts manufacturing.

In terms of research output, impact, and overall strength Canada's performance remains strong. Between 2009 and 2014, Canada produced 3.8% of the world's research publications ranking ninth in the world. It has maintained its international standing in measures of impact, maintaining its ranking in sixth place among peer countries.

Canada's top research fields are: clinical medicine, public health and health services, psychology and cognitive sciences, philosophy and theology, and visual and performing arts. Canadian research is comparatively less specialized and less esteemed in the core fields of the natural sciences and engineering.

The CCA has been documenting Canada's S&T and R&D strengths and weaknesses in a series of reports dating back to 2006. This latest report provides the current data and expert analysis needed for critical conversations on Canada's research strengths, weaknesses, and future prosperity.

## Quotes

"It is a common misconception that Canada is not good at innovation. In fact, Canada is a highly innovative nation, but significant barriers prevent the translation of our innovations into significant and sustainable wealth creation."

-Max Blouw, PhD, Chair of the Expert Panel

"This report tells a familiar story — Canada has much to be proud of, with world-class researchers in many domains of knowledge, but the rest of the world is not standing still and Canada will need to take notice as it determines how best to take action."

-Eric M. Meslin, PhD, FCAHS, President and CEO of the Council of Canadian Academies

## Additional Key Facts

- Canada continues to be home to world-leading infrastructure, facilities, and programs in many fields, with 60% of surveyed top-cited researchers reporting that Canada hosts world-leading infrastructure or programs in their field, an increase of 4 percentage points since 2012.
- Canada compares favourably with other countries on most measures of research skills and education, but the number of R&D personnel employed in industry is falling.
- There was virtually no growth in Canada's total R&D expenditures between 2006 and 2015, and R&D as a share of GDP has consistently declined since 2001. Canada would need to more than double expenditures to equal the R&D intensity of world-leading countries.
- Canada's industrial R&D activity is shifting in response to global and domestic trends in industrial sector, firm size, and foreign ownership. Canada's R&D spending is increasingly concentrated in the services sectors, becomes more concentrated in larger firms, and is increasingly controlled by foreign companies.

- Canada is not a world leader in most enabling and strategic technologies. Canada has lost ground in research areas where it played a seminal role in early research, such as Artificial Intelligence and Regenerative Medicine.
- Canadian R&D capacity is highly concentrated in cities, particularly Toronto, Montréal, Vancouver, Ottawa, and Calgary. These five cities create patents and high-tech companies at nearly twice the rate of other Canadian cities.

## Contacts

Samantha Rae Ayoub  
Communications and Publishing Director  
Council of Canadian Academies  
613.567.5000 x 256  
[samantha.rae@scienceadvice.ca](mailto:samantha.rae@scienceadvice.ca)

## About the Council of Canadian Academies

The CCA is a not-for-profit organization that undertakes independent, evidence-based expert panel assessments and workshops to inform public policy development in Canada. The CCA was founded by three independent organizations that represent some of the finest minds in Canada - the Royal Society of Canada, the Canadian Academy of Engineering, and the Canadian Academy of Health Sciences. Their Fellows and senior decision-makers sit on CCA's Board of Directors and Scientific Advisory Committee, and they are a key source of membership for expert panels. The CCA's Member Academies also provide key guidance and input throughout the assessment process, including expert panel nominations and dissemination processes. For more information about the Council or its assessments, please visit [www.scienceadvice.ca](http://www.scienceadvice.ca).

Follow us on Twitter: [@scienceadvice](https://twitter.com/scienceadvice)