



News Release

Fundamental research: the foundation of innovation

Report sounds alarm bell for Canada's future as global leader for innovation and discovery

28 June 2017 – A new report, “Restoring Canada’s Competitiveness in Fundamental Research: The View from the Bench”, published today by the Global Young Academy, reveals that Canada’s support for fundamental research crumbled over the past decade, leaving many accomplished researchers completely unfunded.

"Research labs are 'idea factories', infusing our society and economy with new knowledge, skills and dynamism. Our previous government's disregard for fundamental research threatened to cut off the supply of new ideas that underlie an innovation-based economy", says lead author Julia Baum of the University of Victoria.

The new report reveals that between 2005 and 2015, the erosion of federal support for fundamental research to Canada’s three major research council’s was dramatic: losses amount to 36% per researcher in the Natural Sciences and Engineering, and 31% per researcher in the Social Sciences and Humanities (taking into account growth in the research community and inflation). Numbers are believed to be similar for health-related fields.

Complementing Canada’s recently released Fundamental Science Review, the new report uniquely provides the perspective of over 1,300 members of the Canadian research community, from the on-line survey that was conducted for the report. "We know that fundamental research funding has eroded, but the critical missing link was understanding how these losses have changed the course of researchers' careers and their contributions to Canada", says co-author Jeremy Kerr of the University of Ottawa.

Dismantling support for fundamental research has changed the very nature of how science is conducted in Canada and had a profound impact on the Canadian research community. Strikingly – and primarily in response to the loss of fundamental research funding – the proportion of researchers who reported that they only conduct fundamental research collapsed from 24% for 2006-2010 to <2% for 2011-2015.

“Fundamental research is the essential building block of new technologies and applications, but it has become virtually impossible for Canadian researchers to focus solely on this critical scientific component”, Baum noted. Overall, 40% of researchers substantially changed the focus of their research programs over the past decade, most commonly away from fundamental research.

The accumulated funding gap for fundamental research in Canada had reached \$535 million by

2015. Canada's new Liberal government began to address this deficit with the 2016 federal budget, adding \$76 million to the three granting councils. The report's authors suggest that investment of \$459 million – the outstanding funding gap - for fundamental research is needed.

The report further recommends that fundamental research funding should be linked to the number of active researchers in the Canadian research community, and that doing so would be likely to sharply increase Canada's research impact globally.

Internationally, the world's research-leading countries spend more than 4% of their GDP on R&D. In Canada, however, gross domestic expenditures on research and development (GERD) declined considerably over the decade from 2005 to 2014, and are now only at 1.61%, relegating Canada to the twentieth place amongst the 34 OECD member states.

"Restoring fundamental research funding to 2005 levels is a sensible starting point", said Baum. "But achieving real leadership on the global stage would require Canada to more than double its investments in research".

The authors caution that Canada's capacity to compete scientifically on the world stage will be greatly diminished if the country's brightest young minds cannot be attracted to careers in research: "A decade of erosion in support for fundamental research has made it more difficult to inspire and train the next generation of scientists. Those are the people Canada needs to solve the wicked problems confronting society and keep our economy innovative", says Professor Kerr.

Restoring Canada's Competitiveness in Fundamental Research: The View from the Bench

Access report and related infographics here: <https://globalyoungacademy.net/gyafun1>

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About the Global Young Academy

The Global Young Academy (GYA) was founded in 2010 with the vision to be the voice of young scientists around the world. The GYA empowers early-career researchers to lead international, interdisciplinary, and intergenerational dialogue by developing and mobilising talent from six continents. Its purpose is to promote reason and inclusiveness in global decision-making. Members are chosen for their demonstrated excellence in scientific achievement and commitment to service. Currently, there are 200 members and 134 alumni from 70 countries. The academy is hosted at the German National Academy of Sciences Leopoldina. The GYA received its seed funding from the Volkswagen Foundation, and since 2014, it has been funded by the German Federal Ministry of Education and Research (BMBF) and supported by the InterAcademy Partnership (IAP). The GYA also benefits from project-specific funding from a variety of donors and partners.