

A chance to get science right

The upcoming Canadian election later this month will provide a welcome opportunity to reboot the federal government's controversial approach to science policy and research. The current Conservative government has been undermining science for the past 9 years, damaging the institutions that make scientific advancement possible and trying to ensure that political and ideological priorities dominate scientific work.

Academic and government research play a particularly important role in Canada, because the private sector does proportionately less research than in most other industrialized countries. As a percentage of gross domestic product, business spending on R&D in the United States is twice as much as it is in Canada. Yet it is public science—in universities and in government—that is eroding under the current government. Science and technology budgets at Canada's 13 science-based federal departments and agencies have been cut by \$596 million (in constant 2007 dollars) between 2008 and 2013. During that period, 2141 full-time equivalent federal scientific positions were eliminated.

Canada's three federal funding agencies for academic research have been hit hard. Allocations for the Social Sciences and Humanities Research Council, the Natural Sciences and Engineering Research Council, and the Canadian Institutes for Health Research have fallen since the present government came to power. The biggest drop has been in the humanities and social sciences, which have seen their real-dollar base funding decline more than 10%. Natural sciences and engineering have experienced a decline of more than 4%, and health sciences funding has dropped by more than 7%. To the money the government does allocate to these agencies, strings are often attached; strings that limit funding to specific political priorities set by the government. The government has also changed membership on the governing councils of these agencies. Historically, they were held primarily by scientific experts in the fields. No longer. On the social sciences and humanities council, the majority of mem-

bers are from the corporate sector, economics, business, and engineering. The council for the natural sciences and engineering has no biologists, chemists, physicists, or mathematicians. Eight of its 17 members are engineers, four are corporate executives, and three are professional administrators. The result is what former University of Toronto president and distinguished medical researcher David Naylor has called a growing emphasis on “fettered”

research: “match-funded, industry-facing research with an applied orientation.”

Beyond the funding agencies, there is a good deal of politically motivated defunding. The federal government's hostility to climate science ended support for the Canadian Foundation for Climate and Atmospheric Sciences and for the Experimental Lakes Area, the world's only living natural laboratory for freshwater research. The government also eliminated Canada's mandatory long-form census, the only source of reliable data for much social science research as well as for the development and evaluation of public policy.

The same government has systematically muzzled government scientists, preventing them from responding to media about published articles without political permission. It has transformed Canada's legendary National Research Council, formerly similar to the U.S. national laboratories, into, in the words of Gary Goodyear, then Minister of Science and Technology, a “concierge service” that offers a single phone number to connect businesses to all their R&D needs.

Canada needs to reverse this damage to its scientific enterprise. An immediate priority should be establishing a prominent role for science in government by creating a parliamentary science officer and a parliamentary research and science advisory council composed of top scientists that report directly to Parliament. Hopefully, the widespread and visible public concern about the fall of science will lead whichever party is elected on 19 October to move in a very different direction. It will take concerted action to make this happen.

— James L. Turk



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