

CIFAR: Positioning Canada at the Centre of Global Research Networks



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We live in a world transformed by science and research. Vaccines, the Green Revolution, computers, the Internet, nuclear energy, biotechnology and more are direct results of research, most of it publicly funded and conducted at universities. These advances have resulted in new companies but also entirely new multi-

billion-dollar industries that employ tens of thousands of people in Canada and globally.

Canadians should contemplate our future within this dynamic context of research and innovation. We have always been a trading nation. We shipped our forests and furs overseas to provide shelter and warmth to most of Europe even before we officially gained nationhood. The world's concerns and challenges have always been our concerns and challenges. Today, we face global challenges along with other nations around the world. Human health and disease, building a diverse and fair society, finding sustainable forms of energy, global security, a sustainable health system, a rapidly aging society, the melting polar ice cap, global climate change, drug-resistant microbes – these issues are neither unique to Canada nor can Canada address them alone.

We cannot afford to be left out

of important discussions at the cutting edge of knowledge creation. To generate innovation and find solutions that improve life in Canada we must link our best researchers with the world's best, share people, ideas and data.

The report *Paradox Lost*, released by the Council of Canadian Academies in October 2013, noted Canada's strong record of academic research: seventh in the world in expenditures on higher education R&D as a percentage of GDP. However, the report warns us not to let this position erode. "Canada must sustain its hard-won status as a global research leader," and "ensure that Canadians have 'insider access' to the latest global knowledge pools since inclusion in the best international networks depends on the quality of one's contributions."

Canada's federal research agencies, such as the CIHR, NSERC, SSHRC and CFI, are creating the

infrastructure, funding the research and developing the talent essential for research excellence in Canada. CIFAR builds on this by positioning Canada at the centre of global research networks to lead the global research agenda.

CIFAR is neither a granting agency nor a research institution. For over 30 years we have been bringing Canada's and the world's best researchers together to create transformative knowledge and engage with stakeholders to harness this knowledge for humanity's betterment. Today, our 11 research networks connect almost 400 Fellows and advisors from 104 institutions in 17 countries to focus on questions of global importance, aiming to improve human health, transform technology, build strong societies, and sustain the Earth.

Since I became president, CIFAR Fellows and Senior Fellows have told me that CIFAR has opened up

new ways of thinking, changed their research directions and spawned new collaborations with researchers in different disciplines. Many Fellows remarked that CIFAR is what an ideal university should be: an outstanding group of scholars meeting on a regular basis to discuss an important question.

CIFAR is currently identifying new research networks through our first-ever Global Call for Ideas. Over 750 researchers from 27 countries submitted 260 letters of intent covering questions in areas ranging from health and biology to green energy to the environment to atomic structure. In August, a selection panel recommended a shortlist of seven finalists. These research teams are developing full proposals addressing sustainability of life on Earth, novel energy solutions, brain and consciousness, and other profound questions. (See <http://www.cifar.ca/global-call-for-ideas> for a

description of the process and the shortlisted proposals.)

Our world has been transformed during Canada's almost 150 years of nationhood. Insulin, discovered in Canada in the 1920s, is now synthesized in bacteria and yeast. The once revolutionary fax machine is nearly obsolete. We can easily transmit photos instantaneously to anywhere in the world. Smallpox is history. A Canadian born today will on average live 45 years longer than our ancestors born in 1867!

What will the world look like in 2167? How can we pass on to our grandchildren a world worth inhabiting? Canada and the world will look vastly different in 150 years and research and innovation will be the single most important drivers of change. Our challenge is to ensure that Canada remains at the epicentre of the global research networks that are catalyzing these profound changes and opportunities.