



**Submission to the Competition Policy Review Panel
On Sharpening Canada's Competitive Edge**

Executive Heads of G13 Universities



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As Executive Heads of Canada's leading research-intensive universities, we are encouraged by the Government of Canada's recognition of the need to pay "attention to a number of critical issues that will serve to shape Canada's competitiveness in the twenty-first century." These are truly important issues and we welcome the opportunity to contribute to the Competition Policy Review Panel and address how Canada can best facilitate investment and enhance our competitiveness in the new global economy. Canada's 13 research-intensive universities are internationally recognized for excellence, and poised to build on this excellence to make Canada a global leader in innovation and competitiveness.

The discussion paper of the Competition Policy Review Panel poses a number of questions for consideration by various sectors in Canada. Two key themes relating to post-secondary education arise from this paper:

**Becoming a destination
for talent**

**Becoming a global leader
in innovation**

Both of these are critical precursors to a highly productive and competitive economy. Canada needs a policy framework that is attuned to global business developments, is nimble in responding to change, and positions the country to successfully compete in a global context. The following provides our combined thinking on how the contribution of Canada's research-intensive universities can be strengthened to advance Canada's competitiveness.

Attracting Talent through Universities

- Within the post-secondary education sector, Canada's research-intensive universities make a significant contribution to Canada's pool of talented, skilled, leading-edge human capital, and to the scholarship that drives innovation and commercialization. A public policy framework that supports the efficient movement of highly qualified people will be critically important in Canada's competitiveness challenges, both for the university sector and the private sector.
- The 13 research-intensive universities produce approximately 70 per cent of the new PhDs granted in Canada (nearly 3,000 degrees per year). Canada's research-intensive universities also play a principal role in attracting highly qualified people to Canada, and many continue to

advance Canadian research or go on to highly skilled jobs in innovative and emerging sectors. While an increasing number of PhDs are being produced, the country currently does not have sufficient numbers of skilled people to drive and support a robust, innovation-based economy. In 2007, the Conference Board of Canada reported that Canada currently has 7.2 researchers per 1,000 employees, while the top performer Finland has 16.5.

Immigration Policy and Supports

- Canada's research-intensive universities are already competing internationally to attract the world's best graduate students, researchers and faculty to contribute to the country's innovation economy, and are eager to attract more. Federal immigration policy must respond to Canada's need to attract and retain highly qualified people by removing policy and institutional barriers, improving the efficiency of the immigration process, providing specialized assistance and supports to those coming to Canada, and increasing federal support to international students. Specific measures and reforms include:
 - Improving the efficiency of student visa application process and providing visa assistance to international students;
 - Expediting immigration processes for people with critical skills who were trained in Canadian graduate schools;
 - Eliminating or easing employment restrictions for international students and foreign spouses/partners of Canadian academics;
 - Providing federal income tax incentives to professors and researchers recruited from outside of Canada (similar to Quebec's income tax exemption); and,
 - Providing more avenues for funding of international graduate students and postdoctoral researchers, such as establishment of international scholarships and fellowship programs.
- Removing policy and institutional barriers to immigration may not alone make Canada sufficiently competitive in attracting and retaining the world's best students and researchers. Incentives may also be necessary. Avrim Lazar, CEO of the Forest Products Association of Canada recently remarked, "I look around the world at who is doing well and I guarantee you that in every instance the government decided to make it possible as opposed to getting out of the way."

Accreditation of Foreign Professionals

- As the Canadian economy becomes increasingly global, the efficient recognition of foreign professional credentials will be vital to our competitiveness. Canada's current system of national and provincial accreditation and licensing bodies is fast becoming an anachronism in the

global context, and creates considerable business impediments in attracting the best and brightest international professionals to Canada. We welcome the government's November 2007 announcement of the establishment of Foreign Credentials Referral Offices as a positive measure to address these challenges. We would strongly advocate that the Panel consider and make recommendations for the reform of Canada's current approach to recognition of foreign credentials.

Maximizing Canada's Research and Innovation through Universities

- Research intensive universities have a key role in initiating, leading and driving innovation. The university sector is the third largest investor in Canadian research and development, contributing \$4.3B (18 per cent) to the enterprise in 2005 (AUCC, 2005). Canada's intellectual advantage is due largely to the leading-edge research done at universities, and is well-linked internationally through collaboration with researchers from all over the world.
- Despite this impressive contribution, Canada is lagging behind its international peers in public funding of universities. In the 1980s, Canadian universities received \$2,000 per student more from governments than their U.S. peers. Today they receive on average \$5,000 less per student.

Competitive Research Funding, and Funding the Institutional Costs of Research

- As public investment in university research and development has increased in other jurisdictions, the research funding that supports graduate students has become more competitive. According to the Conference Board of Canada's 2007 How Canada Performs Report Card, Canada's graduation of doctoral students is "strikingly low." The study found that only Italy awarded fewer Ph.D. degrees per-capita than Canada. Compared to the United States, Canada awards a third fewer doctoral degrees and half as many master's degrees per-capita. This is a significant indicator in the competitiveness and productivity context. Increased research funding would help to support the research environment in Canada, and support increased production of graduate researchers.
- Funding of Canada's universities must be competitive with our international counterparts, and focused support to Canada's research-intensive universities is essential to maximize the contribution of the university sector to Canada's competitiveness and productivity challenges.

Leading jurisdictions such as Germany and California have recognized the value of differentiating research-intensive universities, and others are following. Greater transparency in processes and decisions on research funding would support a focus on research excellence.

- Currently, federal research councils fund the direct and specific costs of research projects, but universities must cover a range of other institutional costs, not least the provision and operation of facilities for researchers, along with ethical and financial oversight of grants and projects. (Universities also provide salaries for the researchers who act as principal investigators on these projects.) We believe the term 'indirect costs' is a misnomer, as is the term 'overhead costs'. These costs are not indirect; they are essential and incurred with each and every funded project. Nor are these costs 'overhead', in the sense that they are somehow excessive or administrative in origin. In fact, these costs are best described as *the institutional costs of research*, while the grants cover *project-specific costs*. A federal tri-council program currently funds these institutional costs at a rate of about 20 cents on the dollar for each dollar of project-specific costs. In other jurisdictions, such as the USA and the UK, the funding rates for institutional costs of research are above 40 cents on the dollar. The current Canadian system represents a profound disincentive to the G-13 institutions that do so much of the cutting-edge research in Canada, and we urge the federal government to proceed with earlier plans to move its coverage of institutional costs to not less than 40 cents on the dollar for all institutions receiving federal grants.
- Federal support for university research is often targeted to specific ventures or sectors, with a focus on commercialization. While targeted research funds serve an important role, longer-term, basic research often yields incremental discoveries with transformative applications that contribute to Canada's economic and cultural prosperity. Support for longer-term, basic research should not be neglected.
- Specific federal support to leading-edge research will help Canadian universities grow, attract and retain the world's best researchers and graduate students to help Canada develop a healthy knowledge-based economy. These supports include:
 - Funding the full costs of research and funding university research at internationally competitive rates;
 - Funding for both basic and applied research in addition to funding for the priority areas identified in the Science and Technology Strategy;
 - Providing seed/investment funds for research initiatives; and,

- Enhancing the ability of federal research agencies and granting councils to support excellence in research (for example, by simplifying their mandates and creating a separate commercialization agency).

Building on University-Industry Collaboration

- The creation of leading-edge research is a core aspect of universities' contribution to innovation, and commercialization is the means by which this research is converted to enterprise and prosperity. Canada's research-intensive universities and industry have a history of working collaboratively to translate Canadian university discoveries into commercial enterprises. Between 2002 and 2005, 99 spin-off companies were created through research undertaken at Canada's 13 research-intensive universities.
- Enhancing university-industry linkages need not focus solely on Canadian companies. Recognizing that innovation is an international activity, support for further linkages with international companies would help to make Canada a destination for leading companies to invest in research and production facilities. We also ask the panel to consider regulatory and tax reforms that would encourage better linkages between Canada's research-intensive universities and leaders in industry.
- These same universities and our partners in business and industry are primed to maximize our collaborative efforts to bring innovative findings to market. Federal incentives, support programs and facilitation of innovative approaches to university-industry partnerships would further enhance our current partnerships and create new opportunities for nimble, effective commercialization of research. Such supports include:
 - Programs and tax-based incentives for industry and business to recruit and retain Masters and PhD graduates;
 - Industry internships for graduate students and post-doctoral students;
 - Programs to facilitate sabbatical-length placements of industry researchers in universities, and university researchers in industry;
 - Funding for international research projects and partnerships; and,
 - Supporting new models of partnership to better convert university discoveries into results, including:
 - Establishment of separate commercialization agencies and infrastructure;
 - Partnerships with small and medium-sized enterprises and venture capitalists;

- Programs and incentives to encourage university-industry and public-sector research;
- Support for effective integration or transfer of non-regulatory federal laboratory research to universities;
- Industry-led partnerships; and
- The co-location of industry research laboratories at or near universities.

Other issues

- We wish to note as well the role of national accreditation bodies in accrediting foreign professionals and skilled graduates and in accrediting innovative university programs. Many aspects of professional accreditation regimes in Canada are found to be onerous, inflexible and outmoded by the very foreign professionals Canada is competing to attract. Accreditation bodies are also influencing the ability of universities to respond to the changing needs of the economy. For example, the Canadian Engineering Accreditation Board (CEAB) is responsible for the accreditation of university programs in engineering. CEAB's accreditation criteria reach beyond this core mandate, however, specifying the professional credentials of certain faculty positions in accredited engineering programs. In the 1990s, several universities encountered a lengthy, bureaucratic process in seeking accreditation for software engineering programs. Universities need a nimble, efficient accreditation system that focuses on outcomes rather than inputs to best support innovation in academic program development.