



Canada's universities: navigating through the changing world

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Association des universités et collèges du Canada
Association of Universities and Colleges of Canada

“We live in a world where the engine of growth is the human mind, building products, offering services and creating whole new industries on the strength of an idea.”

Kevin Lynch



Executive summary

In the coming years, Canadians will witness dramatic economic, demographic and social changes at home and around the world. The Throne Speech which opened the 41st Parliament in June identified the challenges ahead: the need to continue to focus on jobs and growth and to reinforce learning and innovation in order to create a better future for this country, and to build what Governor General David Johnston calls “a smarter, more caring nation”.

Canada’s universities strongly support this vision. In today’s fast-moving world, universities play an enduring role. They are a gateway to opportunity – the surest path to prosperity for Canadians.

Profound changes are shaping our world. Our growth and prosperity will depend on our ability to be more innovative and globally competitive. Canada has benefitted economically – and will continue to do so – from its natural resources. But unquestionably our human resources are becoming a more essential part of this equation. Canada faces a world filled with known challenges, and it is important to address these; but we also face a world in which the unexpected and unintended continually arise. Universities are the places where we prepare people to address the unexpected. To compete on a global stage, we need all Canadians to be able to access and apply all their strengths to their full potential.

Between now and 2017 – Canada’s sesquicentennial – more than one million students will graduate from Canada’s universities. Universities are working hard to make sure these students graduate with the kinds of research, analytical and globally-ready skills they need to help meet tomorrow’s challenges. Canada’s universities already offer the best return on investment in our human capital. This brief contains recommendations aimed at enhancing our ability to compete in a complex, changing world.

Necessary shifts

In the early 1960s, the theory of plate tectonics was new and controversial. While scientists now accept that some of our

planet’s most dynamic features follow the movement of these massive parcels of crust, volcanic activity in Hawaii appeared to be an important exception – until a Canadian university researcher explained how they work in a paper that reshaped our thinking about the world.

Tectonic plates move so slowly that the degree of change is almost imperceptible. Mountains slowly rise and sink, shorelines shift and oceans deepen. Yet these microscopic movements define the physical geography of the world. At one time, it was possible to draw a parallel between the imperceptible change of tectonic plates and the degree of change in international economic markets, and of economic superpowers.

But the global recession has been like an earthquake that affected the entire world. In the early stages of recovery, progress has been uneven, powered by emerging economies like Brazil, India and China. According to the World Economic Forum, India’s financial system is now sounder than those of the United States or United Kingdom. In less than two decades, more than 40 percent of the world’s GDP will come from Asia. These economic shifts are structural. They are as powerful and deep as the tectonic plates upon which the world rests. Canada’s relative economic strength, coupled with the changing dynamic of the international market, presents a strategic opportunity to realign and ensure our own viability and prosperity. Conscious of the shifting



economic landscape, we must find long-term solutions to the economic, social and demographic challenges that lie ahead.

The 41st Parliament marks the beginning of a new chapter. For the first time in a number of years, the government of Canada has an opportunity to consider long-term policies and solutions.

We know that profound changes are taking place in Canada. Our labour market continues to shift from a resource-based to a knowledge-based economy. The fastest growing occupations are those in the knowledge sector. Jobs that require a university degree are the quickest-growing in the country. Even during the recessionary years of 2008-10, there were 300,000 net new jobs for university graduates, compared to 430,000 jobs lost for those with no postsecondary education. Students and their families understand these labour market signals. University enrolment has increased by 57 percent between 1997 and 2010.

Canada is facing unprecedented demographic challenges: a declining birth rate coupled with an aging population. In the next two decades, the number of Canadians over the age of 65 will double. More than six million baby boomers will retire. At the same time, those baby boomers will create greater demands for legal, health and social services throughout our economy. Meanwhile, our working age population – Canadians between the ages of 25 and 64 – is expected to grow by only eight percent.

To prosper and succeed, we will need to nurture talent at all levels, from pre-school to doctoral studies. It is particularly important that those currently under-represented among university students – especially the growing numbers of young Aboriginal Canadians – are encouraged to attend, and supported to succeed, in higher education. In partnership with Aboriginal groups and communities, our universities are building stronger support and “reach back” programs for Aboriginal students; these crucial initiatives will need to continue and grow, with resources from the federal government, provinces and private sector.

In short, Canadians must become more productive and innovative in order to ensure our short and long-term prosperity. And we must do so at a time when global competition for highly-qualified and talented immigrants is intensifying. Other countries, too, recognize the global challenges ahead.

Nurturing globally-ready graduates with innovative skills

In an increasingly complex world we need university graduates with strong interdisciplinary and innovative skills. Students need to learn in a research-enriched global environment that expands their knowledge, nurtures critical thinking and analytic skills, and inspires new ideas and creativity.

Our universities provide the ideal setting to nurture these 21st century skills. Universities are a portal to a larger world – a world of new ideas, bold vision, innovation and broader horizons. We already know that research and innovation can make a tremendous difference to Canada’s society and economy. The recently released report of the Science Technology Innovation Council points out that successful R&D transforms knowledge into products and services that are needed in the global marketplace. Learning in a research-enriched environment transfers existing knowledge and generates new ideas. Through their studies and engagement in research, university students and faculty, working together, can develop new solutions to the challenges that Canada confronts.

Canada’s public investments in research and innovation have increased through the economic downturn, and Canada can be proud of an outstanding talent pool that is already being developed by our universities. In recent years, the government of Canada and provincial governments have made substantial investments to build and improve critical research and teaching infrastructure at Canadian universities. The new Canada Excellence Research Chairs, and the Vanier and Banting Scholars have helped attract the strongest talent from across Canada and around the world. The Knowledge Infrastructure Program, delivered on time across Canadian campuses, has been a resounding success, creating state-of-the-art learning and research facilities that will enhance outcomes for Canadian university students and faculty. Canada’s universities look forward to welcoming Canadians onto our campuses from November 3-11, 2011, to showcase these investments.

Research and innovation can make a tremendous difference to Canada’s society and economy. Successful university research transforms knowledge into products and services that are needed in the global marketplace. University research can lead to better health outcomes, strong and sustainable economic growth and jobs, and greater wealth for Canadians. Funding

provided through the federal research granting agencies – the Social Sciences and Humanities Research Council of Canada, the Natural Sciences and Engineering Research Council, and the Canadian Institutes of Health Research, as well as the Canada Foundation for Innovation – supports graduate scholarships and allows faculty members to engage students in their research. Programs such as research grants, graduate scholarships and the institutional costs of research are critical.

The competitively peer-reviewed research funded by these agencies is internationally recognized as a way to identify the strongest faculty and student researchers. Funding from the granting councils brings students and faculty together and helps them to work more closely with the private sector, governments, community groups, hospitals, schools and charitable organizations to increase Canada's overall productive and innovative capabilities.

AUCC recommends that the government of Canada continue to invest in the critical programs funded by Canada's three internationally-regarded federal granting agencies and the Canada Foundation for Innovation to reflect the vital role of research as the cornerstone of Canada's prosperity.

Building a stronger innovation culture

The 2010 State of the Nation report released June 28 by the Science Technology Innovation Council demonstrates the important progress made by Canadian universities in attracting the best students at all levels from around the world. It highlights promising moves to improve the transfer of new knowledge from universities to the private sector through students by investing in additional resources such as industrial internships.

Universities have increased the number of Master's and PhD graduates markedly. We lead the world in the growth of doctoral degrees awarded in the sciences, which rose 64 percent from 2005 to 2008, and we are second only to Sweden in the growth of PhD degrees in engineering, with a rate of 42 percent. That's great news for an economy that depends on high-level skills and talent.

Yet in relative numbers, Canada still lags, and the STIC report continues to raise concerns that the success of Canadian universities is not being replicated in other sectors of our economy. The report also highlights a highly competitive international environment, and warns Canadians not to be complacent.

So how do we encourage the private sector to take better advantage of the research success at Canada's universities? Recent reports – including those from STIC, the Canadian Council of Academies, the OECD, and the Conference Board of Canada – point to a fundamental link between the production of advanced degrees and a country's innovative capabilities.

An expert panel conducting a review of federal R&D is considering similar issues. In AUCC's submission to that expert panel, we noted that there is a global consensus around what innovation entails: ideas and knowledge; talented, educated, entrepreneurial people; networks, collaboration and linkages; and capital and financing. Innovation also includes new approaches to marketing, organizational behaviour, education; business practices, and external relations, underscoring the vital role that the social sciences and humanities play in innovation.

One key to enhancing innovation, observers agree, is to bring together university students and faculty with partners, especially small and medium-sized businesses but also the private sector as a whole, to build greater collaboration and networks. The STIC report highlighted one significant way that universities and business can work together to improve innovation. Internships, co-op programs and other exchanges, especially at the graduate level, are already making business-university collaboration a reality. They help students prepare for meaningful careers while giving companies insight into the latest science and technologies related to their products and services. Developing such avenues of exchange between business and universities will help build a stronger innovation culture in Canada.

AUCC recommends that the government of Canada continue to invest in talent by developing funding mechanisms that integrate master's and PhD students and graduates into the labour market, helping to meet the growing Canadian labour market demand for graduates with advanced degrees and skills. This recommendation could be funded by shifting some support from programs such as the Scientific and Research Experimental Development tax incentive.

Enhancing global connections

Canada's future is increasingly being shaped by globally interconnected forces. The challenges we face are affected by quickly-moving events around the world. To understand these global challenges, Canada needs employees with knowledge of other countries and an ability to establish



partnerships with colleagues from around the world. A recent report by the Canadian Bureau for International Education polled employers, and found that more than half indicated they would hire a student with international study abroad experiences over a candidate without those experiences; 91 percent of employers identified knowledge of other cultures, and cultural differences in business and relationship building, as an asset in employees.

In responding to this demand, Canadian universities have brought the world to the classroom, and are striving to bring their students to the world. Many governments around the world are addressing similar demands by their respective labour markets for university graduates with study abroad experiences that help make them globally aware. From Brazil to Russia, the European Union to Australia, these countries have created programs to encourage two-way student mobility. Canada, meanwhile, is shutting down a valued international academic mobility program.

Canadian students benefit by learning collaborations with international students. In 2010, approximately 10 percent of university students in Canada came from one of 200 countries, an increase from 1980, when international students represented only six percent of the student body. These students bring their culture and perspectives to the classroom, labs and student residences, and enrich the learning experience for all. The most recent effort by the university community to attract international students to study in Canada took place November 2010 when AUCC led a delegation of 15 university presidents to India. This largest-ever delegation of university presidents succeeded in positioning Canada as a partner of choice for Indian students, faculty, researchers and institutions.

In April 2012, AUCC will lead an even larger delegation of university presidents to Brazil to encourage greater student mobility and international research collaboration between our two countries. This rapidly emerging country has the world's fifth largest population and the eighth-largest economy. In a few years, it will become the fifth-largest economy with its population expected to double by 2040. Brazil is also one of the few economies that have emerged from the global recession with resources to invest. Like China before it, Brazil is now aggressively negotiating with markets around the world, building trust, developing alliances, and nurturing relationships and connections in niche markets. The international research links that our universities will develop during this mission will position Canada to build solid relationships with partners in this South American economic powerhouse.

In our globally-interconnected world, such partnerships developed through international research collaboration create jobs and growth, and ensure that our labour force is equipped with necessary global skills. We need more interchange of faculty and students – more of what has been termed “educational connectivity”.

Canadian faculty are ranked among the top international research collaborators worldwide, and they are supported by targeted international research collaboration strategies of the granting councils. However, these funding envelopes are fully committed and lack room for flexibility to address emerging priorities. Canadian universities need to be responsive and nimble in developing international research linkages. The international research community responds quickly to signals, and will easily move elsewhere if it believes Canadian universities are not ready to engage in partnerships.

AUCC recommends that the government of Canada, in the context of its international education strategy currently being developed, create a significant global research fund that would support student and faculty international research collaboration in thematic and geographic priorities as they emerge, enabling more students and faculty to participate in international collaborative research programs.

Conclusion

Canada's universities understand the need to ensure our country's economic recovery continues, to make certain our economy can create high-quality, sustainable jobs, keep taxes in line, and achieve a balanced budget on schedule. Our universities open us to larger worlds – geographically as well as intellectually, socially, economically, and culturally. Universities prepare us to develop new knowledge and tackle the key problems that come from living in a world of greater complexity.

Canada has emerged from the economic downturn stronger than others, and with the capacity to make strategic choices. The years ahead will be a turning point for Canada one that requires greater productivity to meet the needs of an aging society. The solutions will not be wholly Canadian. Talented minds and novel ideas can and will come from everywhere. But they will start in our classrooms. Universities play an important role in helping Canada to meet the challenges ahead.