Canada's universities: Mapping the way forward

Pre-budget submission to: The Honourable James Flaherty, Minister of Finance

From: the Association of Universities and Colleges of Canada

November 24, 2011

AUCC

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

Established in 1911, the Association of Universities and Colleges of Canada represents 95 Canadian public and private not-for-profit universities and university degree-level colleges. Our mandate is to foster and promote the interests of higher education, both within Canada and abroad.

This fall, universities across the country celebrated the 100th anniversary of the first meeting of university presidents in Montreal, with a landmark speech by Stephen Toope, president of the University of British Columbia, and chair of the AUCC Board.

"We are, first and foremost, Canadians whose vocation—our calling, if you will—is to contribute to the creation and advancement of knowledge in order to make a positive difference in the world," Professor Toope said. "Our highest responsibility is to the wellbeing of Canadians, the health of education in Canada and the ability of higher education to make a positive difference for people, for our communities, and for the world."

As the government makes strategic decisions in developing Budget 2012, universities recommend the following steps that will benefit Canada and Canadians:

- Invest in the critical programs funded by Canada's three internationally-regarded federal granting agencies. AUCC recommends an increase of $40 million to the base budgets of the granting councils, and an increase of $16 million to support the institutional costs of research (equivalent to 40 percent of new direct cost dollars).
- Invest in talent by committing up to $15 million to develop a matching program of 500, 12-month paid internships, valued at $30,000 – that would be matched by the host employer– that integrate master's and PhD students and graduates into the labour market, especially in small- and medium-sized enterprises.
- Increase funding for Aboriginal graduate students by creating 1,000 scholarships annually valued at $10,000 each.
- Allocate an additional $10 million to support innovative and proven university programs that increase Aboriginal student access and retention in university.
- Invest an additional $6 million through the granting councils to continue research collaboration with India in areas of common strength such as aerospace, nanotechnology, sustainable environmental technology and biotechnology.
- Provide $10 million to be allocated through the granting councils for research collaborations with Brazil.
- Demonstrate leadership and seize the opportunity to partner with Brazil by creating scholarships, valued at $10,000, to attract 2,000 Brazilian students to Canada each year for the next three years.

Canada's universities provide solutions in a profoundly changing world.

Our country's future growth and prosperity depend on our ability to be more innovative and globally competitive. The federal government is responding to this imperative, and Canadian universities are active partners.

Investment in higher education and university research pays extraordinary dividends. In the fall of 2008, as the world entered a global economic recession, Canadian universities put forward a strategy both to create thousands of jobs across the country and to provide urgently needed upgrades to many of Canada's university campuses. We welcomed the announcement of the Knowledge Infrastructure Program in March 2009, and worked diligently to deliver on these projects. What began as a direct investment of $1.3 billion from the federal government was leveraged – with funding from the provinces, municipalities and private sector – into an investment of $3.2 billion. Through this significant program, Canada's universities, together with the federal government, created thousands of jobs during the worst recession in more than 65 years. Canadian students and faculty now benefit from state-of-the-art, energy-efficient learning, research, health and wellness facilities. These investments in university infrastructure are making an impact today, and will help shape the future of higher education, research and innovation in Canada for years to come.

Across the country, students and parents continue to recognize the enduring value of a university degree. This fall, undergraduate enrolment at universities topped the one million mark, for the first time ever.

Canada's economic prosperity depends not only upon cultivating skills and talent within Canada, but also attracting the best minds from around the world. In September, some 100,000 international students enrolled at Canadian universities, choosing our country as the place to pursue academic excellence. We need the varied international perspectives these students bring to our university classrooms. Their presence enriches the learning experience for all students. Many international students return home and become ambassadors for Canadian goods, and for Canada itself. Others stay here, and contribute valuable skills and expertise to our labour force.

In the fall of 2009, AUCC called for an international student recruitment strategy to attract more students to Canada and to increase the talent pool for Canada's employers. Budget 2011 announced the creation of a two-year, $10 million international education strategy for Canada. Canada's universities look forward to the outcome of the expert advisory panel on international education, expected to report in June 2012.

In 2010, Canada's universities targeted areas of strategic importance for improving the country's productivity and competitiveness. Attracting Canada Excellence Research Chairs and the creation of the Banting Postdoctoral Fellowships Program enabled universities to retain and attract the smartest minds from within Canada and around the world to our campuses. These women and men tackle tough problems, from developing sustainable energy solutions and protecting our water resources to finding a cure for cancer, which ultimately contribute to our global competitiveness.

Further analysis of global trends also led to concerted action among the university community to build stronger relationships with India. AUCC's delegation of 15 university presidents to India in November 2010, led by Minister of State for Science and Technology Gary Goodyear, was the largest-ever mission of Canadian university presidents abroad. As a sign of their commitment to engaging with India, university leaders on the mission announced funding from their own resources for a series of India-specific initiatives valued at more than $4 million, including a new Canada-India graduate fellowship program, new scholarships for Indian students and institutional partnership funding. We forged a foundation from which Canada-India student exchanges and collaborative international research partnerships are being created.

Today, slower than anticipated recovery in the United States and ongoing economic fragility in the European Union reinforce the importance for Canada to partner with strong, emerging economies like Brazil, India and China. Brazil has the world's fifth-largest population and the eighth-largest economy. In a few years, it will become the fifth-largest economy and its population is expected to double by 2040. In less than two decades, more than 40 percent of the world's GDP will come from Asia. Both China and Brazil are aggressively negotiating with markets around the world, building trust, developing alliances, and nurturing relationships and connections in niche markets. These economic shifts are structural. The global economic landscape is changing.

Charting a new course

In the year ahead, the government of Canada will be called upon to make strategic choices that will lay the foundation for our country's future long-term economic strength. That long-term strategy will be underpinned by a goal universities and the government share: enhancing Canada's economic prosperity and quality of life, in a global economy that depends increasingly on knowledge and innovation.

Canada must chart a course in this new economic landscape, reset our compass to navigate through new global realities, and identify the areas of strength on which we should focus our efforts.

The history of Canadian university research is a story of innovation and charting new territory. University research has achieved breakthroughs that have altered the way we think, work, behave and live. Prosperous societies are innovative societies, and innovation begins with basic research. The research conducted at Canada's universities provides the foundation for innovation throughout our economy. Breakthroughs come not only in the health sciences or engineering, but through important advances in social sciences and humanities research. Canadian university researchers have developed a system for tracking criminals using geographic (GIS) data; created an e-coli vaccine for cattle, which now prevents 500,000 food-borne illnesses in humans each year; and are developing strategies for schools and kids to deal with cyber-bullying and stop it from occurring. Innovation has benefits around the world. Canadian university researchers have been working to eradicate AIDS and malaria and recent advances in their work contributed to the Muskoka Initiative on Maternal, Newborn and Child Health, which was adopted at the G8 summit in June 2010. The story of Canada's universities is a story of dynamic change – a story of our future.

In 2011, AUCC's centennial year, Canada's universities have reflected on the accomplishments of our past, are working to meet the demands of today, and are planning for challenges that the next century is likely to bring. At our centennial meeting in Montreal in October 2011, Stephen Toope, president of the University of British Columbia and chair of AUCC, made a series of commitments on behalf of Canada's universities, which aim to benefit our society, culture and economy:

- Inviting Canadians to join in a national dialogue on the entire education system – for the good of all students and Canada's future.
- Enhancing the learning experience of our students to better prepare them for a changing world.
- Continuing to provide high-quality, research-enriched learning experiences, and strengthening our efforts to reach out to under-represented groups in university education, including Aboriginal people and rural Canadians.
- Concentrating the world's best minds on the world's toughest problems to create, communicate and apply new knowledge to effect tangible, positive change in the world.
- Reaching beyond our own institutions to create alliances, partnerships and initiatives of shared purpose to address the challenges facing the world, nation and our communities.

The recommendations proposed in this submission by Canada's universities for Budget 2012 will help universities to deliver on those commitments, for the benefit of all Canadians.

Encouraging innovative ideas and skills

> "Research leads to discoveries and inventions. That leads to patents that build Canadian businesses and create Canadian jobs, and that makes greater prosperity for Canadian families and workers."
>
> The Right Honourable Stephen Harper, Prime Minister of Canada, August 3, 2011, Announcement of the 2011 Vanier Canada Graduate Scholarships

It has been said that being innovative means knowing how to ask the right questions and integrate diverse perspectives into a solution. Innovation is creativity with purpose.

In mid-October, AUCC welcomed the broad vision of innovation outlined in the report of the Independent Panel on Federal Support to Research and Development (the Jenkins' report). The panel's report to the federal government affirmed the leading role that universities play in providing the talent, discovery and ideas that serve as the cornerstone of our economy and society. The recommendations in the report called for a series of measures that will create closer links among university research, business and governments in order to create a more dynamic culture of innovation in Canada. AUCC looks forward to the government's response to this report.

In its report, the panel identified the primary role that universities, their faculty, students and graduates occupy as the leading contributors to innovation. It recognized the pressing need for support for the institutional costs of research. And it called for Canada to invest in basic research at internationally competitive levels.

Funding to support the innovative ideas of university faculty is essential to enriching the learning environment of university students, and ensuring they gain the analytical, creative and innovative skills they need in tomorrow's labour force. These ideas are most frequently supported by Canada's world-class peer-reviewed system for allocating research funding through the three granting agencies. Admired around the world, this system funds the best ideas, the most promising basic research. To support the creation and exploration of novel ideas in a research-enriched learning environment, ***AUCC recommends that the government of Canada continue to invest in the critical programs funded by Canada's three internationally-regarded federal granting agencies. AUCC recommends an increase of $40 million to the base budgets of the granting councils, and an increase of $16 million to support the institutional costs of research (equivalent to 40 percent of new direct cost dollars).***

The 2010 State of the Nation report, released earlier this year by the Science, Technology and Innovation Council, also pointed to the need for more mechanisms to encourage and enhance the connections between recent university graduates and private sector employers. Supporting the recommendations of both reports, ***AUCC recommends that the federal government continue to invest in talent by committing up to $15 million to develop a matching program of 500, 12-month paid internships, valued at $30,000 – that would be matched by the host employer – that integrate master's and PhD students and graduates into the labour market, especially for small- and medium-sized enterprises.*** These interns will help to meet Canada's growing labour market demand for graduates with advanced degrees and skills, and foster a stronger culture of innovation in the private sector. This recommendation could be funded by shifting some support from programs such as the Scientific Research and Experimental Development Tax Credit.

A strong foundation for innovation

> "By targeting Economic Action Plan investments towards innovation we recognized, like any forward-looking business would, the true benefits of investments in research both for short-term advantage and long-term gain. It is fair to ask: Can Ottawa do more? Absolutely. Will we attempt to do just that over the next four years? Absolutely."
>
> The Honourable James Flaherty, Minister of Finance, September 16, 2011, Perimeter Institute

In addition to federal support for university research and innovation, the private sector chooses to spend almost $1 billion for research at Canadian universities, and the health and social services sector invests almost $1 billion more. In conducting approximately 38 percent of research in Canada, universities also act as incubators of talent, instilling a dedication to discovery in students and cultivating future employees with the skills in demand by our workforce.

The ability of universities to meet modern research, teaching and learning needs, to retain top Canadian students and researchers, and to attract highly-qualified people from other countries, is directly related to the quality of our research infrastructure.

In recent years, substantial investments in the Canada Foundation for Innovation, Big Science, the Knowledge Infrastructure Program, CANARIE and High-Performance Computing have enabled Canada's universities to do just this. Research infrastructure is more than the bricks and mortar of a building. University research infrastructure extends to other systems and elements of the research enterprise. These include high performance computers and networks, libraries, and the people who support our researchers through the grants process, the management of intellectual property, and those who ensure that universities comply with and maintain national standards for research ethics, biosafety and animal care.

Like global financial markets, the community of top researchers around the world responds quickly to signals of investment and support for leading research. Multi-year, predictable and sustained funding is an important and integral aspect of government innovation policies, and helps to ensure Canada's global reputation as a place to do high-quality research.

In recognition of the vital role of research infrastructure, AUCC looks to the government to signal continued investment in the Canada Foundation for Innovation, and to continue funding for CANARIE. AUCC also supports this year's Expert Panel on Federal Support for Research and Development and the Expert Panel on Commercialization, chaired by Joseph Rotman in 2006, both of which urged the government to review and modernize the support for the total institutional costs of research.

Ensuring skills for all Canadians

> "Canada's natural resource is not our oil, it's not our minerals, it's not our forests; it's our young people… [We've] got to compete on brains."
>
> Pierre Lassonde, co-founder of Franco-Nevada Mining Corporation, who recently donated $25 million to York University to create renaissance engineers.

Since the 1970s, changes have been taking place in our labour market and our demographic mix. Canada has shifted from a resource-based to a service-based economy and the fastest growing occupations are now in the service sector. In the last 20 years, 2.4 million new jobs were filled by university graduates. And jobs for people with a high school diploma, or less, are disappearing. Even during the recession from 2008 to 2010, there were 300,000 net new jobs for university graduates.

At the same time, Canada's population is aging. By 2030, our population over the age of 65 will double and the population of working age (25-64) will grow by only eight percent. In short, there will be greater demand for social, legal and medical services and proportionately fewer people to support an aging, increasingly dependent population.

To respond to the anticipated economic, social and labour market demands, universities need to expand access to higher education for untapped segments of the population – especially Aboriginal Canadians.

Universities have long been committed to increasing Aboriginal student enrolment by addressing the unique challenges these students face, which include the absence of Aboriginal role models in education, the need for enhanced financial support, and the need for programs that support Aboriginal students in their own cultures and languages. Many Canadian universities have developed programs, in collaboration with Aboriginal communities, to attract Aboriginal students and support them through to graduation. A key element of many of these programs is people: Aboriginal faculty, instructors and professional staff who act as role models for Aboriginal youth outside of their home community. However, resources are limited, and there is widespread consensus that the funding gap to fully engage Aboriginal students in postsecondary education is in the range of $300 million.

As an initial step, AUCC recommends a targeted investment that can create lasting results quickly, by increasing the number of Aboriginal graduate students and faculty members and providing more positive role models for Aboriginal youth. ***AUCC recommends that the government increase funding for Aboriginal graduate students by creating 1,000 scholarships annually valued at $10,000 each.*** Funding could be provided to a third-party organization with a track record of achievement. It could also be established as a fund to be matched by the private sector. ***AUCC also recommends that an additional $10 million be allocated to support innovative and proven university programs that increase Aboriginal student access and retention in university.***

Making global knowledge connections

The populations of Brazil and India are growing as rapidly as their economies. India is planning for an increase of 10 million students from 2012 to 2017 – although that target will be difficult to achieve. Strong domestic demand in India will continue to drive growth in the numbers of Indian students seeking study abroad experiences. In Brazil, university enrolment more than doubled from 2.4 million students in 1999 to 5.4 million students in 2008; the country is already producing more PhDs than Canada.

Today's learning environment is global. Talent comes from everywhere. Like the strongest economies, the top students and researchers are globally engaged. Forty percent of today's university faculty in Canada received their first or highest degree in another country and 30 percent of Canada Research Chairs were recruited from abroad. These women and men are not just coming from the United States and the United Kingdom. They have been recruited from more than 150 different countries, underscoring the compelling need for a dedicated fund in Canada that helps make global connections and that enables international research collaboration at scale.

Given the comparative strength of the Canadian economy, we have an opportunity to invest in international research collaboration that will pay dividends for decades to come. AUCC has recommended that the government create a significant global research fund that would support student and faculty international research collaboration and enable more students and faculty to participate in international collaborative research programs.

There are two immediate priorities for initial investment in international global research connections. Brazil and India are actively seeking partners in academia, research and the private sector. Canada shares many areas of strength with these

countries. In recent years, Canada has increased its attention on India. In November 2009, the Prime Minister travelled to India, during which time Canada opened three new trade offices. In June 2010, Canada hosted Indian Prime Minister Manmohan Singh, and our two countries signed an MOU on cultural cooperation, higher education, earth sciences and mining.

In November 2010, a delegation of 15 university presidents travelled to India, where they chose to invest $4 million in funding for Canada-India research partnerships and student exchanges. Most recently, Canada's universities welcomed the announcement of a competition to create a Canada-India Centre of Excellence in Budget 2011, which will serve to further enhance knowledge transfer between our two countries. To maintain this momentum, ***AUCC recommends that an additional $6 million be invested through the granting councils to continue research collaboration with India in areas of common strength such as aerospace, nanotechnology, sustainable environmental technology and biotechnology.*** Canada's universities are working with counterparts in India through the process established by the Prime Minister, and will provide a more detailed outline of joint initiatives in coming weeks.

Canada's universities have also been actively pursuing knowledge links with Brazil as a strategic priority. In June, AUCC led a session on advancing strategic engagement with Brazil, bringing together senior delegates from more than half of Canada's universities, their Brazilian counterparts, government representatives and other stakeholders. Canada's universities are well-positioned to play a leading role in fostering the kinds of collaborative research and innovation that drives economic growth and strengthens relationships. Canadian and Brazilian universities have already signalled their strong interest in reciprocal and mutually beneficial relationships and a shared interest in promoting innovation.

In April 2012, a delegation of more than 30 university presidents will travel to Brazil to forge even stronger relationships with the Brazilian higher education sector. To be led by His Excellency the Right Honourable David Johnston, Governor General of Canada, the mission will encourage student exchange and seek to tap into the significant potential that exists for our two countries to engage in international research collaboration in a number of key sectors, including aerospace and biotechnology. To ensure that Canadian universities have resources to back up Canada's strong interest in developing linkages with their Brazilian counterparts, ***AUCC recommends that $10 million be allocated through the granting councils for research collaborations with Brazil.***

By way of meeting domestic demand for education, the government of Brazil has committed to funding 75,000 students at the undergraduate, doctoral and postdoctoral levels to study abroad, over a period of three years. Other countries have already signalled their interest in hosting Brazilian scholarship students. ***AUCC recommends that the government of Canada demonstrate leadership and seize this opportunity to partner with Brazil by creating scholarships, valued at $10,000, to attract 2,000 Brazilian students to Canada each year for the next three years.*** These scholarships will serve to reinforce the expressions of intent made during recent high-level visits to Brazil, and could be supplemented by the provinces and private sector.

Conclusion

> "You simply can't build a modern economy without investing in world-class research."
>
> The Right Honourable Stephen Harper, Prime Minister of Canada, September 16, 2011, International Vaccine Centre

Canadians can be proud of their universities. They are equipping today's students for tomorrow's challenges. They are strengthening local communities through dynamic research and engagement. They are vital components in building a culture of innovation.

Canada's economic, fiscal and financial advantage, coupled with our knowledge advantage, provides unparalleled opportunities for Canada to achieve greater ambitions.

The proposals contained in this document recognize the fiscal challenge facing Canada, identify targeted investments to achieve concrete results that take advantage of Canada's global position, and sustain universities' abilities to advance Canada's prosperity and quality of life.

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

600-350 Albert Street
Ottawa, Ontario
K1R 1B1, Canada
www.aucc.ca

Cover photo: Lakehead University