

## Standing Committee on Finance (FINA)

### Pre-budget consultations 2012

## McMaster University

### Responses

#### 1. Economic Recovery and Growth

*Given the current climate of federal and global fiscal restraint, what specific federal measures do you feel are needed for a sustained economic recovery and enhanced economic growth in Canada?*

McMaster University supports strategic spending targeted to areas that enable innovation, promote creativity and build Canada's competitiveness. The knowledge and new discoveries derived from university research provides a platform for innovation and a stable foundation for a strong economy. Universities have the capacity to work with government and industry partners to ensure that knowledge is used effectively and that Canada capitalizes on the creativity and talent of our students and future leaders. To support this, it is imperative that there is continued and enhanced investment in the federal granting councils and a similar commitment to the future funding of the CFI and CRC Programs emphasizing student training provided by graduate and post-graduate scholarships. The indirect costs of research must also be supported. It is estimated that universities currently perform over \$1B of industry-related research in any given year. Sustained funding to research will yield benefits on a local, national and international scale. Targeted investment in research on pan-Canadian priorities such as aging, infectious diseases and innovation in support of our manufacturing-based economy is also important. As an example, infectious diseases kill thousands of Canadians every year and are the world's most common killers of children and the elderly. Infectious Disease costs are measured in a number of ways, including the effect of disease on health and quality of life, in dollars spent on healthcare interventions, and in lost productivity. The current arsenal of antibiotics is substantially eroded by the spread of resistance. At McMaster, the Michael G. DeGroot Institute for Infectious Disease Research is making a substantial impact. Its experts from across many disciplines are working with state-of-the-art infrastructure and have developed important partnerships with the Public Health Agency of Canada, the U.S. National Institutes of Health and other agencies, to speed the discovery of new antibiotics and ways to stop resistance. With strategic government investment, the Institute is prepared to expand to a larger mandate with the addition of a team dedicated to emerging outbreaks, ongoing drug discovery and diagnostic testing to tackle the anticipated debilitating health challenges caused by infectious disease and create commercial opportunities for Canada.

#### 2. Job Creation

*As Canadian companies face pressures resulting from such factors as uncertainty about the U.S. economic recovery, a sovereign debt crisis in Europe, and competition from a number of developed and developing countries, what specific federal actions do you believe should be taken to promote job creation in Canada, including that which occurs as a result of enhanced internal and international trade?*

In order to promote job creation, it is critical to ensure that funding bodies such as CFI and the Tri-Council (CIHR, NSERC and SSHRC) continue to make strategic investments in research and infrastructure and that the indirect costs of research are considered and funded. Each of these funding agencies plays a crucial role by supporting university research that promotes creativity and critical thinking, spurs innovation and improves the lives of Canadians. University researchers are on the leading edge of innovation, a key factor in economic development, job creation and increased productivity. In particular, CFI's investments in research infrastructure need ongoing support to ensure sustainability

and to optimize the return on these investments. McMaster researchers have developed strong partnerships with industry. Through these partnerships, businesses (including SME's) are able to access the intellectual resources and the state-of-the-art R&D facilities that universities provide, at a fraction of the cost. It is also important to increase opportunities for international research collaborations to ensure Canadian researchers are able to leverage both the financial and human resources available to their international partners. Capitalizing on such collaborations promotes our research talent, supports international recruitment and retention of our researchers, attracts top international students and allows access to international markets. Collaborative research across the globe will provide economic development opportunities and also leads to increased international trade. It is equally important for government to expand scholarship programs both for Canadian students and foreign students alike. Much like research partnerships, the benefits of international exchange are significant. These scholarships provide our students with the means to build their global knowledge and enhance international business skills. Also, as a direct result of Canada's first-rate education and research capacity, we are able to attract top-tier doctoral students, who contribute positively to our economic, social and research-based growth. Consideration should also be given to programs designed to retain these international students post-graduation as desired immigrants to Canada. We encourage the government to continue to invest in programs such as the CRC, CERC, the Vanier Canada Graduate Scholarships, and the Banting Postdoctoral Fellowships.

### **3. Demographic Change**

*What specific federal measures do you think should be implemented to help the country address the consequences of, and challenges associated with, the aging of the Canadian population and of skills shortages?*

The Association of Universities and Colleges of Canada identified that campuses across the country are addressing these challenges by conducting research, attracting international students, encouraging access to education for more Aboriginal Canadians and developing talented, creative graduates who will respond to these difficult problems. McMaster University has been working for more than a decade with other universities and colleges, as well as governments and industry partners, to address the skills shortages in several areas. In partnership with Mohawk College, McMaster has developed an innovative Bachelor of Technology degree that enables employees to move from the shop floor to the executive suite. In partnership with Mohawk College and Conestoga College in Kitchener, McMaster has developed a consortium nursing program which graduates more than 440 nurses a year. The Michael G. DeGroote School of Medicine has doubled the number of physician graduates and broadened the overall student experience by opening campuses in Niagara and Waterloo. It also established Canada's first civilian physician assistant program to expand the capacity of Canada's health work force. These are just a few examples of McMaster's response to the skills shortage. In addition, McMaster has an impressive depth of multidisciplinary research experience in the field of aging and often works with partners such as Health Canada. This research ranges from finding ways for seniors to remain licenced drivers to developing ways to improve their overall quality of life. McMaster hosts the CIHR-supported Canadian Longitudinal Study on Aging, the national, long-term study of adult development and aging. The University is now developing a comprehensive, multi-disciplinary strategy in this important field. The new initiative includes studies in aging, which focus on the development of active and productive citizenry into later years, maximizing mobility, slowing chronic disease and tackling deadly infections. The initiative will also see the construction of a major Canadian web-based portal or information service that would be the authoritative voice on optimal aging in Canada. This promises to be an incubator for generating new ideas, applications and evidence-based research. With the support of government, McMaster could speed results through an expansion of these multidisciplinary initiatives.

#### **4. Productivity**

*With labour market challenges arising in part as a result of the aging of Canada's population and an ongoing focus on the actions needed for competitiveness, what specific federal initiatives are needed in order to increase productivity in Canada?*

To increase our competitiveness as a nation, there must be a concerted effort to close the innovation gap, namely reducing the time from initial idea to commercial success. Previous investments in university research and innovation mean that we are already home to world-class talent and infrastructure. Now we need to create a model that allows universities to capitalize on their existing strengths and resources and drive innovation in partnership with the private sector. Initiating changes to the NRC as first announced in Budget 2012, to ensure a focus on demand-driven research could play a major role in reducing timescales and accelerating the market entry of Canadian innovations. If the NRC was able to focus resources on test/scale-up facilities, prototype development, proof of principle and performance demonstration capabilities this would provide great assistance in reducing the time from idea to commercialization. This will benefit Canadian industry as a whole, but will have a particularly positive impact on SMEs, which represent the backbone and future of Canada's economy. McMaster researchers have developed strong partnerships with industry. These partnerships help to maximize the impact of innovative research by ensuring that knowledge and technology is closely linked with commercial needs. These partnerships are also the training ground for the next generation of innovators, whose work on industrially relevant projects strengthens their ability to perform and excel in industry. Such projects are critical to the success of SMEs, which are able to access the intellectual resources and the state-of-the-art R&D facilities that universities provide, at a fraction of the cost. We would also recommend identifying strategic targeted funding opportunities for communities in transition, such as Hamilton. We are already realizing the power of these targeted investments through the FedDev-funded McMaster Automotive Resource Centre (MARC). MARC, which will create 120 – 150 jobs, is providing the much-needed space to work with our partners in both the private and public sectors, to conduct applied research and train the highly-qualified personnel needed by industry. It is also enabling us to build a critical mass of talent by supporting the recruitment and retention of world-class scientists and engineers.

#### **5. Other Challenges**

*With some Canadian individuals, businesses and communities facing particular challenges at this time, in your view, who is facing the most challenges, what are the challenges that are being faced and what specific federal actions are needed to address these challenges?*

Canada's Aboriginal population continues to face challenges and these have been exacerbated by the global downturn. Post-secondary education (PSE) is critical to the economic and social success of all Canadians, including Aboriginal peoples. In Ontario participation rates in PSE for Aboriginal peoples is lower than in other provinces, especially at the university level. McMaster has a particular interest in building these pathways for at-risk youth, with an emphasis on Aboriginal students. The University's geographic location places it within close proximity to two distinct Aboriginal populations - the more than 11,000 people at Six Nations Grand River Reserve located about 25 km from Hamilton, and the estimated 15,000 Aboriginal people living within the City of Hamilton. Notwithstanding this significant Aboriginal population close to McMaster, there are many barriers to PSE participation and success. McMaster currently undertakes a number of activities to create the necessary pathways and we are building on these. For example, the University's Faculty of Social Sciences has combined its understanding of the multiple concurrent barriers faced by Aboriginal students with a Life Cycle approach to program planning and intervention that addresses barriers faced by Aboriginal learners at different stages of their learning. The goals of the Faculty are to improve access to University for

Aboriginal peoples from a variety of communities, improve Aboriginal student retention and success at University, increase cultural awareness amongst our student body and build Aboriginal leadership within the Faculty. McMaster has also been a leader in developing a national Aboriginal curriculum now used at Canadian medical schools. At our Michael G. DeGroot School of Medicine, self-identified Aboriginal applicants are assisted through the admissions process by the Aboriginal Health Sciences Office and the curriculum for all students includes training in diversity of cultural approaches to medicine. The medical school currently has 11 Aboriginal students in its three-year undergraduate program and, in 2009 alone, graduated nine Aboriginal physicians. We are supportive of measures to improve the education delivered at the primary and secondary levels, and would recommend increasing opportunities and pathways for higher education.