

8. Some Views and Highlights of University Research and Innovation

Whether at the provincial or federal level, innovation and productivity-directed instruments are diffused by equalization principles. Capacity building through allocation of block grants is not successful in the absence of competition and performance-driven plans and accountabilities. Ontario must achieve distinction and impact in the global economy, and build competitive advantage over national and international competitors. International excellence is required to have local economic impact.

The best form of technology transfer is two feet.

In Canada, universities and university research have a tremendous economic impact, and contribute more to the generation of knowledge workers, knowledge and innovative technologies than any other sector.

—*Economist*

Dr. James Orbinski, a graduate of Trent University, McMaster University, and the University of Toronto, is the International President and first Canadian President of Médecins Sans Frontières (MSF) (Doctors Without Borders), an independent agency that provides medical and humanitarian aid to populations in danger due to environmental disasters or war. Dr. Orbinski received the 1999 Nobel Peace Prize on behalf of MSF.

Dr. G.M. Bancroft, a Professor in the Department of Chemistry at the University of Western Ontario is a Canadian leader in Synchrotron Radiation. He has conducted research in conjunction with Imperial Oil, Dofasco and Chevron. Research into Synchrotron Radiation has applications in micro-machining, new drug design and a number of other industries.

Students clearly recognize quality programs, research contributions to their learning and opportunities for sophisticated work-place experience as a valuable part of university educational student.

University research expenditures produce a gross increase of nearly \$5 billion in GDP and result in more than 81,000 jobs. The total dynamic impact that university research has on labour and capital, amounts to approximately \$15.5 billion each year which corresponds to approximately 150,000 to 200,000 jobs.

– Martin and Trudeau, 1998
*The Economic Impact
of University Research*

Basic research feeds the pipeline for innovation.

– Economist

Research at York University and McMaster University is making a transformative contribution to the management of pollutants in the environment and to the creation of new environmental technologies.

The University of Guelph partners with the Canadian headquarters of Novartis Crop Protection, located in the Guelph Research Park, to conduct research and to provide co-op opportunities for students.

Innovation is the product of imagination and of the genius that inhabits creative minds.

– Aristotle (*paraphrased*)

During the course of basic medical research into Malignant Hypothermia in humans, researchers at the University of Toronto, led by Dr. David MacLennan, discovered a link between this genetic disorder and one that affects approximately 3% of pigs. By testing animals for this gene, breeding companies have prevented defective pigs from breeding, and saved farmers and meat packers millions of dollars. Ontario pig farmers, from Glengarry County to Niagara County, are benefitting from this discovery as are pig farmers worldwide and a range of new related technologies are now under development.

A professor at Wilfrid Laurier University received a prestigious award from the American Psychological Association and the American Psychological Foundation for his work in the establishment of a community mental health coalition, a self-help resource centre and for his research on innovation in three community mental health organizations.

At Lakehead University, a close partnership has been forged between the university's forestry program and Bowater, a major pulp and paper company. This is a multi-faceted partnership involving research into the improvement of pulp and paper production.

Strengthening the research capacity of universities not only keeps talented people in Ontario, it attracts the type of leaders and new investment that create additional jobs and opportunities.

– *Economist*

The University of Western Ontario conducts high impact research in the field of women's studies collaborating with local and international partners to promote the health and advancement of women.

An international research partnership in Ecuador and Mexico builds on Trent University's expertise in environmental science.

Research at Trent University led to the development of new computer software that allows for superior quality control, product efficiencies and process improvement on production lines in the pulp and paper industry. It has been adopted by several major pulp and paper companies including Peterborough Paper Converters, Domtar Packaging, and Interlake Papers. Carleton University has a productive 20-year research relationship with Pratt and Whitney Aerospace that contributes knowledge and technology and supports student education.

Ryerson Polytechnic University's Centre for the Study of Commercial Activity is providing valuable research and data for the Ontario retail sector as it faces the impact of increasing international competition and rapid technological change.

Exciting research at the University of Guelph partners with the medical faculties of the University of Toronto and the University of Western Ontario and the British firm Imutrend to conduct research in transgenic pigs as sources of organs. This research has exciting implications for the medical communities in Ontario, Canada and worldwide.

Innovation is best served when the environment provides maximum degrees of freedom.

—*Outstanding Canadian Scientist
and Senior Policy Advisor*

Professors Dennis McPherson and Doug Rabb of Lakehead University have received Canada's very first Rockefeller Humanities Grant to support research and teaching in Native and Indigenous Philosophy.

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Universities should work synergistically with industry; they must not be industry. Unless universities retain their culture, base of fundamental research, and educational mission, they will not have value to bring to the partnership.

– MIT President Dr. Chuck Vest,
*Unlocking Our Future:
Toward a New National
Science Policy, 1999*

Alumni of York University, including three graduates of the Bachelor's program in Film and Video, have formed the film production company Rhombus Media. This company, based in Toronto has made a significant impact on the international film world, and has produced such highly acclaimed films as *The Red Violin* and *32 Short Films About Glenn Gould*. Rhombus Media has raised the profile of Canadian film making, contributed to the Ontario film industry and made a contribution to the cultural life of the province.

Canadian university research is a powerful stimulus for economic development, producing measurable increases in GDP and employment. More importantly, university research is shown to exert a dynamic and continuing impact on the underlying productivity of the economy, which carries forward in the future.

– Martin and Trudeau, 1998
Ibid.