

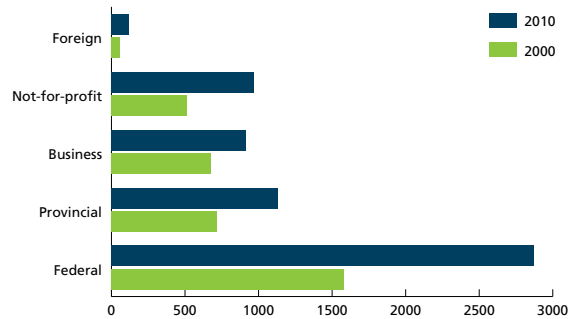
## University research matters to Canadians



Today, more than ever, university research matters to Canadians.

The importance of university research to Canadian innovation and quality of life is reflected in investments by the federal government and other external funding partners. Funding from 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 along with the Canada Foundation for Innovation – not only supports graduate and post-graduate scholarships, but also allows faculty members to engage students in their research.

Over the last 10 years, external funding for university research has nearly doubled



In the last 10 years, federal support for university research has increased by more than 80 percent, stimulating research in high priority areas for Canada, where our universities have world-recognized expertise.

Research is recognized worldwide – by the OECD and other organizations – as a crucial driver of innovation and our social and economic well-being. Research is vital to success in the increasingly competitive global economy. High-quality university research enables Canada to respond to the crises of today and build the reservoir of knowledge and skills to face an uncertain future.

**No one knows what the careers of the future will be. The watchword of the 21<sup>st</sup> century is resilience. We live in a time where the only security lies in the confidence and capability to navigate a world of constant change, an ability university students acquire through a research-enriched, globally connected education.**

**“At ArcelorMittal Dofasco, we believe improvements and breakthrough innovations require external exchanges and close cooperation. Our partner universities are critical collaborators for both research and training tomorrow’s best and brightest employees.”**

*Sean P. Donnelly, Vice President, Technology and Continuous Improvement, ArcelorMittal Dofasco.*

## THE VALUE OF UNIVERSITY RESEARCH



The Association of Universities and Colleges of Canada is the voice of Canada’s universities.

AUCC represents 95 Canadian public and private not-for-profit universities and university-degree level colleges.

600 - 350 Albert Street  
Ottawa ON K1R 1B1  
[www.aucc.ca](http://www.aucc.ca)

*Photo: University of Guelph*

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## Making Canada an innovation leader



The story of discovery at Canadian universities is the story of scientific research that saves lives, technological innovations that help businesses compete, social science research that informs public policy, humanities research that contributes to our arts and culture, and new ideas that improve quality of life at home and around the world.

Prosperous societies are innovative societies, and innovation begins with basic research. The research conducted at Canada's universities provides the basis for innovation throughout our economy. This is evident not only in new and improved products, goods, services and processes, but also through new approaches to marketing, organizational behaviour, business practices and external relations.

➤ **Canada's universities undertake a growing share of our nation's R&D.** In 2010, Canadian universities were responsible for more than one-third (38.2 percent) of Canada's R&D activity, conducting more than \$11.1 billion in research. This is up from 2000, when universities conducted \$7.1 billion (28.2 percent) of the total \$25.1 billion in research activities in Canada.

➤ **Universities conduct almost \$1 billion in research annually with the business sector.** Businesses partner with universities to access research expertise, interdisciplinary knowledge and high quality students and researchers.

In 2008 alone, Canada's universities reported 1,613 new inventions and filed 1,791 patent applications. Intellectual property revenue amounted to \$53.2 million. Since 1999, research discoveries and innovation at Canada's universities have resulted in the creation of 1,242 spin-off companies.

But the impact of university research is much greater. While there are no Canadian figures, a U.S. study examining private-sector patents found that more than half of these patents originated in university research. And the overall economic impact of university research in Canada exceeds \$60 billion a year.

## Enhancing quality of life

A patient gets faster cancer treatment. A child enjoys the health benefits of more nutritional eggs. A family saves money by using solar-heated hot water. These represent just a few of the innovations that improve our daily lives, all thanks to the research that takes place at Canadian universities.

The contribution of universities through research extends well beyond economic impacts. Canadian university research addresses challenges in key areas including healthcare, education and energy needs.

In short, university research makes life better for Canadians.

Current university research includes efforts to develop a pill or patch that could help prevent heart disease, tools for cheaper and more accurate water-quality testing, and new treatments for childhood leukemia.

Canadian university research and innovation also improves quality of life around the world. Recent examples include innovations aimed at improving maternal and newborn survival and health at birth in developing nations, and an invention that transforms a simple cell phone – common even in the poorest countries in sub-Saharan Africa – into a mobile blood-oxygen tester.

➤ **Universities now conduct almost \$1 billion per year in research for the not-for-profit sector, addressing pressing health and social issues that affect communities across Canada.** The contribution of universities in solving social problems is reflected in the non-profit sector's investment in university research, which nearly doubled from 2000 to 2010. The social challenges universities address include affordable housing, sustainable healthcare, homelessness, crime prevention, environmental sustainability, addiction and substance abuse, poverty and immigrant settlement.

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## Building Canada's talent pool

Research is a primary driver of Canada's competitive advantage, and people are the primary driver of outstanding research.

**The research environment at Canada's universities helps students develop the critical thinking and analytical skills demanded by today's workforce.**

Recent reports – including those by Canada's Science Technology and Innovation Council, the Council of Canadian Academies, and the OECD – point to a fundamental link between the production of advanced degrees and a country's innovative capabilities.

Canada now leads the world in the growth of doctoral degrees awarded in the sciences, which rose 64 percent from 2005 to 2008. We are second only to Sweden in the growth of PhD degrees in engineering, with a rate of 42 percent. Even though we still lag significantly in relative numbers, this growth is great news for an economy that depends on high-level skills and talent.

➤ **All university students benefit directly from research-enriched learning environments at Canada's universities.** Engagement in research expands students' knowledge and inspires new ideas and creativity. Research-enriched learning gives students a greater understanding about how our environment, communities, businesses, governments and healthcare systems work. As a result, students and faculty are working together to develop new solutions to the challenges we confront every day, and universities are producing the highly capable leaders of tomorrow.

➤ **Strong employment prospects are why more Canadians than ever before want a university education.** In fact, from 2008 to 2010, 300,000 new jobs were created in Canada for university graduates, compared to 430,000 fewer jobs for those with no postsecondary education.

And university graduates enjoy rewarding careers. Over their working lives, they will typically earn \$1.3 million more than those who complete only secondary school and \$1 million more than those with a college diploma.

**“We are given broad questions to answer through research. These questions have real-life applications, which is amazing. Being able to do so much research, I have acquired a lot of new skills that I can apply elsewhere.”**

Rachel Charney, third-year Honours Integrated Science student, McMaster University

