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## ACCESS TO POST SECONDARY & GRADUATE EDUCATION

Dr. Bruce H. Sells, FRS(C)  
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The Canadian Federation of Biological Societies (CFBS) represents the members of 13 Canadian Life Science organizations from across this Country. CFBS' mission is to promote research, facilitate the dissemination and economic use of knowledge in the Life Sciences and to contribute to a forward-looking science policy for Canada.

The Federal Government has embarked on an innovation strategy that is aimed at making Canada one of the top 5 nations in research and development. The life sciences community has responded positively to the Government's initiatives over the past 5 years since it believes that they will enable our country as an innovative and productive society. Underlying the goal of being in the top 5 is the need for well-trained/educated personnel to implement the government's "Innovation Strategy".

### PROBLEM

Productivity in research and innovation depends on having the right people with the right training. We encourage the Federal Government to deal with the problem of rising tuition costs since they 1) disenfranchise a growing number of potential students from lower income family from entering Post Secondary Institutions and 2) because of the rising debt-loads discourage many capable individuals from entering graduate programs.

We further believe that it is time the federal and provincial governments entered into a partnership to develop an effective policy regarding the funding of post secondary education to ensure that Canada has the personnel to respond to the innovation strategy.

### THE NEED

Canada's ability to compete internationally relates directly to our capacity to satisfy our manpower requirements. In his last report the Auditor General, Denis Desautels, indicated that, during the first 10 years of this century, the Federal public service expects between 7,000 and 9,000 employees per year to retire. Currently, 63% of the government jobs require a university degree compared to 46% 20 years ago.

As the current wave of retirements occurs in universities, it is estimated that 30,000 faculty members will have to be found over the next decade. Demographics dictate that a large exodus of highly skilled scientists can be expected from industry in this same time period. Finally, a survey of independent businesses has suggested that as many as 300,000 jobs in small- and medium-sized firms remain unfilled, in part, because of a shortage of workers with the capabilities to fill them. Whatever the precise number, what is clear is that Canada's ability to recruit well educated/trained individuals is critical to our survival as an innovative and more productive society. One approach the Government envisages is recruiting from abroad. ***Since the demand for highly qualified personnel is expected to be universally high in developed countries, this strategy may have limited success unless the environment for innovation is exceptional in Canada.*** A British government report (Roberts, Sir G., SET for success, The supply of people with science, technology, engineering and mathematics skills, HM Treasury, UK

Government 2002) highlights the decrease in enrolment rate in areas of science where there is an increasing demand for these individuals thus emphasizing the continuing need to attract the best people into these careers.

***An article in the April 24th, 2002 Ottawa Citizen quotes the CD Howe Institute study "Renovating the Ivory Tower" which notes that Canadian Governments' financial support for universities has fallen far behind public support given U.S. universities. This study, that reinforces the need for greater attention to our postsecondary institutions, concludes that the decreased expenditures over the past two decades may help explain Canada's lagging living standards.***

## **EDUCATION**

"Without a substantial increase in the proportion of young Canadians undertaking post-secondary studies and going on to obtain graduate degrees that our labour market demands, Canada will be unable to improve productivity or fully seize the opportunities that the new knowledge-based economy offers. "

While this has been a stated concern of the recently published "Canada's Innovation Strategy" there is a growing unease regarding our capacity to generate the individuals needed to ensure that this Country maintains a competitive edge as a progressive and innovative society. Attempts to satisfy our highly qualified personnel needs by depending on individuals from offshore may not be an effective solution. It is important, therefore, that Canada harvests its best minds.

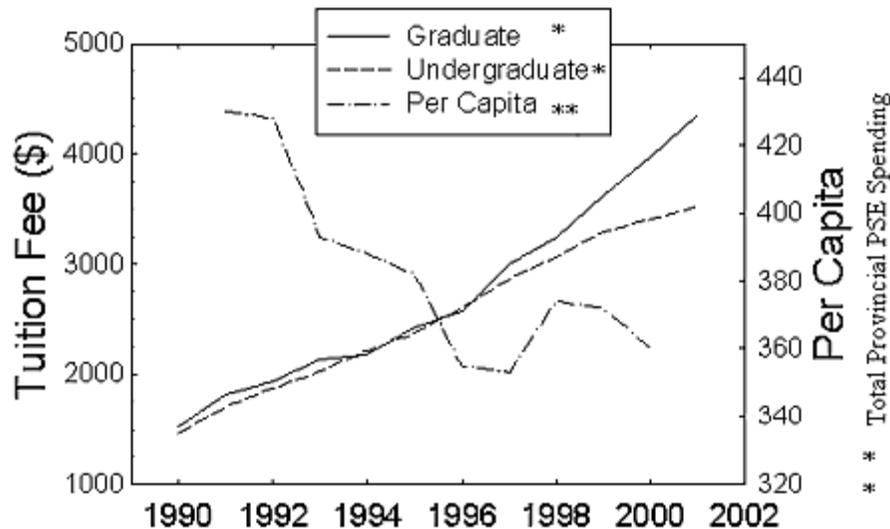
***The Federal Government can have a direct impact on quality and productivity of our academic scientists and universities by expanding the successful Canada Research Chairs program with specific focus on university professors that contribute to the training of undergraduate and graduate students.***

### **Attracting Students into Undergraduate and Graduate Programs**

***"To reach the knowledge performance target of becoming one of the top 5 countries for R&D performance by 2010 we will need at least to double the number of research personnel and foster a "strong management class" \*\*\*2 .***

In the absence of adequate university operating budgets much of the financial shortfall has been downloaded onto the students in the form of increased tuition costs. While it may be reasonable to expect a student to contribute to her/his education, there comes a point where the level of tuition becomes counterproductive. Not all bright and creative minds come from wealthy families. As costs to attend university increase, a drop can be expected in the number of individuals from lower and middle-income families in post secondary institutions. Those who do attend, upon graduation, will have increasingly larger debt loads. This level of financial obligation then creates a deterrent for those creative individuals capable of entering graduate programs and research careers.

The figure below documents the average increase in tuition costs during the past 10 years (data kindly provided by the Association for Universities and Community Colleges (AUCC) and Provincial Post Secondary Education Spending (Statistics Canada).



\* Source: Data Kindly provided by AUCC

\*\* Source: Calculations based on Statistic Canada, Provincial and Territorial General Government Revenue and Expenditures, Financial Management System Basis

The Federal Government has an opportunity to attract the best students to pursue graduate education by expanding the ability of granting councils to support training initiatives. These initiatives go a long way towards making our universities more effective in the production of high calibre personnel. However, for this strategy to be successful over the long term a meaningful solution will have to be found, based on cooperation between Federal and Provincial Governments if universities are to function effectively in the production of high calibre personnel.

## RECOMMENDATIONS

Productivity in research and innovation depends on having the right people with the right training. We support expansion of training programs for post secondary education and strategies such as the Canada Research Chairs' program for the retention of our active university-based researchers.

That for the health of the Canadian economy the federal and provincial governments cooperate to develop an effective policy regarding the funding of post secondary education to ensure that Canada has the personnel to respond to the innovation strategy.

## Potential Solutions

### The Next Generation of Scientists

With the rising costs of attending university and the increasing debt load following the undergraduate degree many bright students are delaying their entrance to graduate studies. Canada is in danger of not having sufficient numbers of individuals at the PhD level to promote the "innovation strategy". The allocations of the Federal Government should be geared to ensuring that the granting councils are able to offer graduate stipends and innovative training programs to attract our brightest students to careers as researchers. The level of support should be such that the graduate student will not incur massive debt and use up the prime of her/his life to obtain a career in science. To ensure that both undergraduate and graduate students receive training from the best qualified individuals strategies are required to enable many of our brightest

minds to contribute to both research and training. The federal government can have a direct impact on the quality and productivity of our academic scientists by expanding the successful Canada Research Chairs program with a specific focus on professors that contribute to the education of both undergraduate and graduate students.

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\*1 Canada's Innovation Strategy Achieving Excellence P. 56

\* 2 Ditto Executive Summary P. 8