



# **INVESTING IN BRITISH COLUMBIA'S RESEARCH INFRASTRUCTURE:**

## **CAN WE AFFORD NOT TO?**

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# INVESTING IN BRITISH COLUMBIA'S RESEARCH INFRASTRUCTURE: CAN WE AFFORD NOT TO?

## The Importance of Research to a New Economy

Modern industrial societies and the economies within them are in the midst of change that is close to revolutionary. The immediate cause appears to many to be technological; however the real forces of change are ideas, knowledge and innovation. Never have knowledge and innovation played such a critical role in determining economic and social well being. Regional and national prosperity is virtually dependent upon successful and effective knowledge creation and dissemination. Investment, jobs and incomes are directly associated with the strength and vitality of the knowledge-based sectors and institutions. And the overall capacity to exploit knowledge for effective innovation is largely determined by leadership and understanding that shapes and embeds a learning based culture that values ideas and knowledge.

The most important focus points for research and knowledge development exist within the research-based universities. It is these institutions that determine the vigor and vitality of the new economies, characterized by their high value added, high wage, and high employment levels. And in many respects these institutions provide the foundations for the values that are embedded within the culture.

Their contributions are not simply scientific and technological. Universities also contribute to a culture and society, which is analytical, literate, and attuned to innovation and creativity. Knowledge and ideas are valued and understood as important in communities and regions where the university is vital and recognized. Graduates of universities, from the liberal arts, the humanities and the professions, as much as from the sciences, know and understand the importance of knowledge and the application of knowledge, and thus make important contributions to the overall effectiveness of the society. They have the skills and developed ability to think, analyze, understand and lead. They are imbued with the values and the qualities of the knowledge-based society.

***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  
The Economic Impact of  
University Research

There is however, a very practical question of ensuring that the universities are in the very best position to contribute fully what they have to offer. There is a need to attend to the needs and requirements of dynamic, competitive and successful research-based universities and the research activities within them. In order to do so it is necessary to identify the significant constraints to realizing their potential in terms of contributing to knowledge and innovation, and how these can be addressed.

One issue is overall funding support for research. On this front, there is room for some optimism. After a period of cuts and reductions in grants in aid of research, there is now a growing recognition that reductions in research support are inconsistent with the larger realities and social and economic needs. Federal funding of the granting agencies is being restored, and new support for facilities in the form of the Canada Foundation for Innovation and the B.C. Knowledge Development Fund are providing much needed additions to one important aspect of research capacity. The Canada Research Chairs will make an important contribution to research effort. The Canadian Institutes of Health Research will more than double nationally funded health research at a time when there are rising levels of concern about the stability of Canada's health care system.

***The universities of British Columbia have been and are an important creative force in terms of innovation and the economic development that flows from innovation. Both provincial and federal governments agree that the future of Canada and B.C. depends upon successfully building and sustaining a high value added, high wage, knowledge based economy. Innovation is perhaps the most critical element in doing so.***  
- British Columbia Universities On The Cusp:  
Entering A New Millennium  
November, 1999

However, notwithstanding these important initiatives, there continues to be a fundamental obstacle to capitalizing fully on the potential of the universities to contribute. In Canada, including British Columbia, government funded research pays for only a portion of the total real costs of such research activity. Support for university research comes primarily in the form of grants-in-aid to researchers and only covers the direct costs of a research project ie. the expenditures dedicated specifically to the research undertaking. Indirect costs or those costs associated with providing the services and physical environment necessary for the overall conduct of research but not associated directly with specific projects are not covered by these grants. While the distinction between the two

levels of costs associated with research is subtle, it is real. Failure to recognize the indirect costs of research seriously threatens the ability to capture value for the money devoted to the direct costs of research and, furthermore, it creates inevitable pressures on other core areas of university programs.

The gap in funding which results from the absence of any real recognition of the indirect costs of research seriously threatens the ability to capture value for money devoted to research. It hampers the ability of top university researchers to commit to important research that would otherwise be undertaken. It reduces the effectiveness of research that is funded and undertaken. And it undermines the ability of Canadian universities to be competitive in attracting research scholars and in mounting research

work, in the face of substantial provisions in support for such infrastructure within the United States, and elsewhere, where the operational costs of university-based research have long been recognized. The issue needs to be addressed, and quickly.

British Columbia universities have been more successful of late in national competitions for research funding. This is an important and positive development but it must be understood that, without the support necessary to address infrastructure and related indirect costs, B.C. universities will be unable to fully deliver upon their potential to contribute to both the creation of new knowledge and the advancement of the economic interests of the province. The universities believe it is in their interest and in the public interest to occupy a competitive world class position in research development and in the creation of a culture of innovation. This objective will remain out of reach unless it is one shared by the province and supported by a provincial commitment to assist with the indirect costs of research activity.

### The Gap in Funding the Total Costs of Research

The problem can be best understood by examining the history and practice of research funding within Canada. The Government of Canada, and to a lesser extent, provincial agencies, provides grants-in-aid for university-based research, covering the direct costs of the research undertaken. Direct costs include expenditures dedicated specifically to the research undertaking, such as materials, supplies, project specific equipment, non-professorial research personnel employed specifically for the research project and for the purposes of the project only, data manipulation and analysis, and other similar kinds of expenses. The principle is to recognize costs that occur only as a result of the particular research, and which would not be incurred if that project did not proceed. The accounting methodology used to capture such costs excludes costs the university

***G***overnment funding is the primary support for virtually all investment in truly frontier university research. Sustained investment in internationally competitive university research and scholarship augments the pool of talented innovators in a jurisdiction through the development, attraction and retention of the very best minds, scientists and professionals as well as through the teaching benefits that accrue in preparing the next generation of talent.

*Without an adequate base of public investment, universities, researchers and research programs cannot adequately contribute to the talent, knowledge and new technologies necessary to effectively grow the prosperity and social well-being of a jurisdiction and a Nation*

*- Heather Munroe-Blum, December, 1999  
Growing Ontario's Innovation System*

would incur should the research project itself not proceed, including all of the more general costs needed to maintain a research establishment, and to ensure that the university is 'research ready' and has the capacity to undertake high quality work on a timely basis.

In practice, the accounting for costs of research does not proceed according to any normal or standard categorizations. Major parts of the resources contributing to a project are partitioned and excluded, on the basis that they constitute indirect costs. The indirect costs are in effect the residual

of all costs not included in the definition of direct costs, and are simply assumed away by the funding agencies. Not on the basis that they do not exist (indeed if not assumed to be incurred a project would not get funding), but on the basis that they are financed from some other source. These costs include the use of buildings, including capital costs and depreciation, the use of facilities and equipment, including the costs of operating and maintaining them, all administrative overheads (including secretarial, accounting, communication and processing, financial, personnel and facilities management), skilled professionals employed on an on-going basis to ensure complex equipment and facilities are supported and maintained, professors and other faculty members engaged in the research, library operations and collections, including acquisitions and maintenance, and general university operating costs.

Funding agencies and government officials do not and have not claimed that such costs are fictional. Rather the position has been the university must fund these costs from a different source. It is interesting to note that university research supported by the private sector has long-recognized the full costs of research and this is fully reflected in contracts associated with such research activity. Not surprisingly, this position in part at least has its roots in the Canadian federal system and the on-going complexities of concluding who is responsible for what costs. The underlying position of the federal government is that the indirect costs of research are so embedded in the costs of university operations generally as to make it logical that they should be treated as part of core post-secondary education costs. When governments were assuming a considerable share of those costs, as was the case for many years, and when core funding increased at about the same rate as research funding, governments may have been meeting most or all of these costs through the core funding.

This situation prevailed throughout the 1950's, '60's and early 70's. Through the 1970's, however, two things changed rather dramatically. First, the federal government began a long process of removing the linkage of its contribution to university funding to the levels of core operating funds provided to the universities by the provinces. The result of this was the federal funding included an ever-decreasing allotment for indirect research costs. Second, university core operating grants at that time began a long downward trend on a per student basis, while direct research funding continued to increase, leading to an ever widening gap between direct research funding and the amount available to support the infrastructure from core operating grants. Or, from a slightly different perspective, the cost pressures associated with teaching and university operations meant that fewer and fewer resources were available to support indirect research costs. Universities have experienced a decline in capacity to mount high quality research, and are less and less able to respond to the direct grants-in-aid available through the granting agencies. In addition, universities have found it increasingly difficult to nurture the critical linkage between research activity and the development of the next generation of research leaders.

## **The Significance and Importance of the Problem**

The absence of support for the indirect costs of research is critical for two fundamental reasons. One, it inevitably reduces research effort generally, with profound negative effects on the British Columbia and Canadian economies. Second, it has the effect of putting British Columbia and Canadian universities at a severe relative disadvantage to their United States counterparts, where there is a reasonable allocation of resources by the granting agencies to address such costs.

As has already been noted, a modern industrial economy such as that of British Columbia must evolve rapidly in the direction of a high value added, high wage, knowledge-based economy. It is simply not possible to remain competitive in products and services that are produced with low skilled, low paid labour that use technology and techniques employing large amounts of low skilled labour, limited knowledge inputs, and low-end technology. Globalization is ensuring that such products are produced in third-world economies structurally suited to their production, and shipped into markets throughout the world, including Canada. Canada simply cannot compete in such product markets. This in turn means that all sectors, if they are to exist and remain competitive, must adapt to high value added, high productivity strategies involving ever more advanced technology and knowledge. And it means as the economy evolves and adapts, there must be a continuing shift to the knowledge based, high technology sectors.

There are a number of conditions necessary to ensure that the economy evolves in the directions needed. Quality entrepreneurship, high levels of capital investment, innovation, and general growth and prosperity are all critically important. In addition, and no less important, are continuing development of knowledge and technology and the availability of a highly educated, knowledgeable work force.

The continuing development of knowledge and technology is almost totally dependent on investment in research and development. Innovation is integrally linked to this, since most productivity boosting innovation flows directly from research and development.

With respect to research and development, there is cause for serious concern about British Columbia's position. Over the past few years, the province has not matched the investment being made by other provinces in supporting both the direct and indirect costs of research. Quebec has had a long history of supporting indirect costs of research and provides funding of 15% of the federal research dollars received by researchers in Quebec universities. In a recent report entitled " Toward Innovation ", a key recommendation is the call for the provincial government to increase the level of support for indirect costs to 40% of the total direct research dollars. Ontario has also recently announced a move towards funding indirect costs. In the recent provincial budget, \$30 million was earmarked for providing indirect costs for provincial research funding in Ontario. Alberta has made substantial investments in research and has been

very successful in attracting research activity and related economic growth to the province.

British Columbia is also lagging other provinces in direct expenditures on research funding. Table 1 shows the position of British Columbia relative to other provinces in Canada, in terms of R&D expenditures and R&D as a proportion of GDP.

**Table 1**  
**Provinces Ranked by Annual R&D Expenditures, 1997**

Province by Rank	R&D Expenditures	Province by Rank	R&D as % of GDP
Ontario	\$6,252 million	Quebec	2.1%
Quebec	\$3,887	Ontario	1.77
<b>B.C.</b>	<b>\$ 998</b>	Nova Scotia	1.20
Alberta	\$ 984	Manitoba	1.00
Manitoba	\$ 290	Alberta	1.00
Saskatchewan	\$ 248	<b>B.C.</b>	0.92
New Brunswick	\$ 133	Saskatchewan	0.80
Newfoundland	\$ 88	Newfoundland	0.80
P.E.I.	\$ 17	New Brunswick	0.80
		P.E.I.	0.80

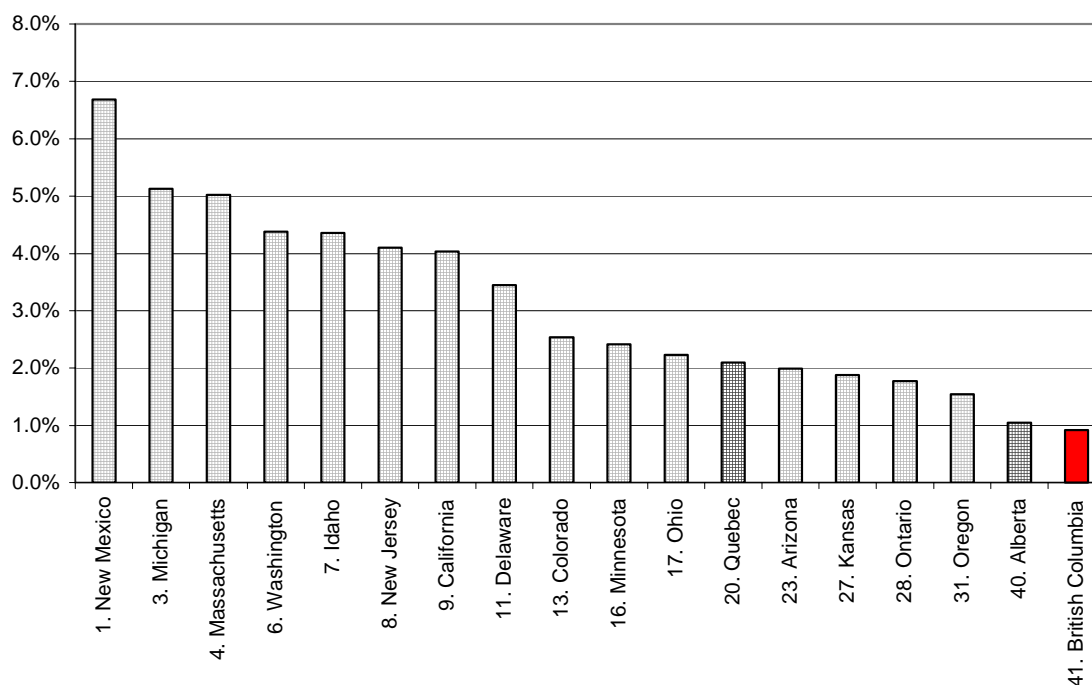
**Source:** Statistics Canada, No. 88-001-XIB

This information does not include the rather dramatic research specific investments made by Alberta, Quebec and Ontario in recent provincial budgets despite recent research investments in B.C. It is reasonable to conclude the B.C. position has experienced further decline.

Of course, British Columbia must remain competitive not only with other provinces, but in a North American context as well. In this respect, even more worrying is the relative position in North America. Table 2 shows the position of B.C. and other selected provinces and states for R&D as a proportion of GDP and in order of rank.

**Table 2**

### Rank and R&D as % of GDP, Selected Provinces and States



**Source:** Heather Monroe-Blum, *Growing Ontario's Innovation System*, Government of Ontario, December, 1999, p. 21.

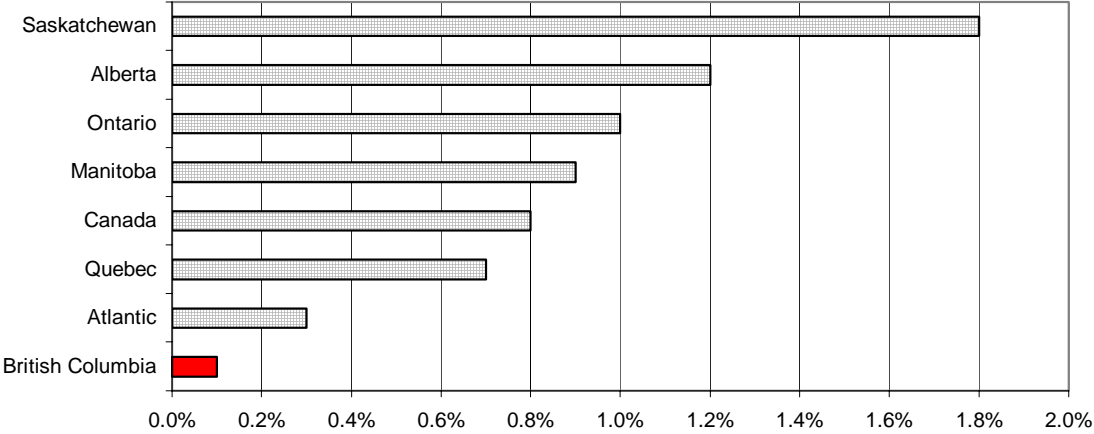
Research and development expenditures are of course a key measure on the input side with respect to remaining competitive in the development of high value added, knowledge based, high technology products, which makes the preceding data important.

It is also useful to examine the output side of the economy to try to identify a measure of the effect of the input data. On the output side, a key measure in relative terms is productivity. In this respect, the results confirm what is suggested by the input data on R&D.

In Canada, manufacturing productivity has fallen from about 88% of that of the United States in 1980 to about 75% in 1997. While productivity for the economy overall has remained relatively unchanged for the two countries over the period, this is largely because of the much higher dependence of the Canadian economy on the resource sectors, which did well in terms of productivity growth for most of the period, thereby camouflaging the impact in terms of the remaining goods producing sectors. The resource sectors are now rapidly losing the value-added premium they once enjoyed, emphasizing the importance of the other goods producing sectors in competitive terms. The immediate impact of this decline has been cushioned by a decline in the value of the currency. This however, is only a temporary correction to the productivity problem.

British Columbia's situation is particularly worrying. Table 3 contains comparative productivity growth rates per annum for the period 1984-97.

**Table 3**  
**Annual Productivity Growth Rates, Canada, 1984-97**



**Source:** Industry Canada

In order to regain its underlying competitive position, B.C. must focus on becoming a much more competitive region in terms of the high value added, knowledge-based products. This in turn means more resources devoted to research and development. The largest proportion of research and development expenditures in B.C., occurs within the university sector. It is thus important to address university research if there is to be a correction to the declining and eroding competitive position of British Columbia, as illustrated in the preceding data.

Developments in other provinces will almost certainly affect the relative position of British Columbia in the future. Table 4 contains data on overall research and development funding for the university sector by province for 1997-98.

**Table 4**  
**Total Annual University Research Funding, by Province and Source, 1998 (\$,000)**

Area	Federal	Provincial	Business	Non.Prof/Oth	Total
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Ontario	307.7	141.9	165.6	176.0	791.2
Quebec	198.0	136.2	102.3	87.5	524.0
Alberta	89.1	51.9	38.0	26.6	205.6
B.C.	89.8	26.4	35.4	26.0	178.2
Manitoba	28.0	6.8	8.6	18.9	62.3
Sask.	18.5	17.6	8.1	7.1	51.3
N.S.	30.2	4.7	8.5	10.2	53.6
Nfld.	16.5	0.4	7.2	2.8	26.9
N.B.	11.4	2.5	6.3	5.7	25.9
P.E.I	1.2	0.4	0.2	0.4	2.2
Canada	790.4	388.8	380.2	406.2	1921.2

**Sources:** Universities, Granting Agencies and Industry Canada

This table confirms that some provinces have already gained a competitive advantage in terms of university research funding. Provinces that stand out are Ontario, Alberta, and Saskatchewan. Alberta and Saskatchewan are already investing at a much higher rate per capita than B.C. through provincial funding of research, as the table shows. Further, but not included in the data, Alberta has just launched the new Alberta Foundation for Science and Engineering Research, providing an incremental contribution to research of approximately 25 million per year starting in year 2000. This will bring provincial research funding in Alberta to over \$75 million per year.

In Ontario, the new measures have been even more dramatic, in their own way. The Ontario Innovation Trust to Support Research Infrastructure, funded originally at \$250 million to leverage federal dollars for infrastructure, has been increased to \$750 million. Under a new program, provincial research funding will now be accompanied by money to support indirect costs of research, with an expenditure of over \$30 million per year. The Premier's Research Excellence Awards to support graduate students and young faculty, established at \$50 million over 10 years, has been doubled to \$100 million.

The British Columbia Government has not been passive in the face of these growing challenges. The Knowledge Development Fund (KDF) was established to help fund physical infrastructure for research by meeting part of the matching fund requirements under the federal Canadian Foundation for Innovation. This was funded to the amount of \$100 million over six years, with an additional \$117 million added in the 2000/01 budget. The improvements to the Knowledge Development Fund have been of critical importance in making it possible for B.C. universities to succeed in competing for C.F.I. funding.

Notwithstanding these developments, there is a clear need to increase the share of the research money coming in to the British Columbia research and development system. In this respect, there can be no doubt that other provincial jurisdictions have come of late to realize the importance of university-based research and development, and are pursuing aggressive strategies in this regard.

Overall, B.C. faces the very real problem of an eroding provincial position in terms of funding for direct research effort. The KDF, while meeting an important need, contributes nothing to the direct or indirect costs of funded research, as normally accounted for.

As a further problem, all Canadian universities face a serious competitive disadvantage with United States universities in terms of the indirect costs of research. Table 5 shows the total estimated cost of research undertaken as a result federal granting agency funding, and the amount granted for each of the direct and indirect components, for selected universities in the United States and Canada in 1998-99. [In examining this table, it is important to note again that Canadian universities receive only the direct cost component.]

**Table 5**  
**Direct, Indirect and Total Costs Paid by Federal Funding Agencies**  
**United States, Selected Universities, 1998-99 (\$,000)**

University	Total Funding	Indirect Cost Funding	Direct Cost Funding
California (System)	1,281.8	427.3	854.5
MIT	449.4	175.4	274.0
Harvard	220.7	86.1	134.6
Stanford	275.2	98.8	176.4
Washington	196.0	66.2	129.8
Toronto	107.0	0.0	107.0
<b>UBC</b>	<b>64.7</b>	<b>0.0</b>	<b>64.7</b>

As noted earlier, the reason that the amount is zero for indirect cost funding of the Canadian universities is that it is the practice of the funding agencies in Canada to fund only the direct costs of research. Indirect costs have to be met from internal university resources, and in Canada these include salaries of professors working on the research, which is not the case in the United States. Table 6 shows the indirect cost rates at U.S. universities.

**Table 6**  
**Indirect Cost Rate at Selected U.S. Universities**  
**1998 – 1999**

<b>UNIVERSITY</b>	<b>INDIRECT COST RATE %</b>
Columbia University	71
Harvard University	64
University of Southern California	64
M.I.T.	64
Cornell University	63
Stanford University	56
University of Illinois, Urbana, Champaign	57
University of California, Berkeley	50
University of Washington	51
Carnegie-Mellon University	56

It is clear from this that U.S. universities are in a much better position to mount aggressive research programs, and at the same time maintain high quality teaching and associated programs. Unless and until Canadian universities are on a level playing field with their U.S. competitors, it can be expected that the U.S. universities will increasingly be able to more generously reward and provide much better research and career opportunities to world-class researchers. And overall, they will be much better resourced and better positioned to meet the challenges of an increasingly globalized knowledge-based world.

### **The Opportunity**

The federal government has recognized the need for Canadian universities to be competitive with the U.S. and with other world-class research institutions. In response, the government is not only restoring research funding, which had declined in the early nineties, but also enhancing research through a series of progressive new initiatives. The Canada Foundation for Innovation, (CFI), launched in 1997, with funding of close to \$1 billion over three years was directed at providing universities, hospitals and other research institutes, the opportunity to acquire state-of-the-art equipment, to undertake leading edge research in critical areas where advances are occurring rapidly. Funding to CFI was increased by \$900 million recently. The Canadian Institutes for Health Research, poised to transform health research in Canada will see a progressive increase

in funding to \$500 million over the next three years and potentially to \$1 billion thereafter. The Canada Research Chairs program is visionary in scope, because it provides Canadian universities the opportunity to attract the best minds, at a time when North American universities are entering a stage of vigorous renewal due to retirements. The other two granting councils, NSERC and SSHRC have also received increases in funding over the past three years, and are likely to receive further increases. Genome Canada, funded at \$160 million over five years will result in five centers across Canada, of which one will be in B.C., providing researchers in this province a base of support in frontier research that is revolutionizing the life sciences, with major implications for health research.

This new funding comes without indirect research cost support and will seriously strain the existing resource base for supporting the new research effort, which is largely from the core operating budgets of universities. The time has come to make the most critical investment of all, the support for indirect costs of research, without which the full potential of new investment in research will not be realized.

### **The Magnitude of the Problem**

In the United States, research infrastructure costs have been examined and documented in great detail, since as has already been indicated universities receive funding from the Federal Government to cover such costs. Published results of this work show that there are considerable differences depending on the institution. As a result different universities receive different amounts of funding. In general, indirect costs have been found to be in the range of 45% to 65% of the direct costs of a research project.<sup>1</sup> The division of costs is on principles similar to in Canada, excepting that in the United States pro-rated professor salaries are covered under direct costs. Should they be included in indirect costs as in Canada, the percentage of indirect to direct costs would be higher than the above reported figures.

The Association of Universities and Colleges in Canada estimates that in Canada it costs universities 40 cents to support each research dollar received in federal research grants. This number is widely accepted in Canada, although based on the United States experience, it is likely at the low end of the actual indirect costs if they were to be fully accounted for. Table 7 contains the actual recognized direct costs and estimates of the indirect costs and total costs of research associated with federal funding agency grants for selected Canadian universities in 1997-98 and 1998-99.

***Every dollar of direct funding for competitively allocated research awards carries with it to the recipient institution costs which range from 50 to 100% of direct costs, to support state-of-the-art laboratories, libraries, technology and assessment tools necessary to carry out the research and to maximize the impact of the research for the community it serves. All of this leads to a perverse and literally counter-productive consequence--serious financial penalties for research success in attracting government-sponsored research support***  
*- Heather Munroe-Blum, December, 1999*  
*Growine Ontario's Innovation System*

<sup>1</sup> See Robert M. May and Stuart S. Sarson, *Revealing the Hidden Costs of Research*, Nature, Vol. 198, 8 April, 1999.

**Table 7**

**Actual Direct and Estimated Indirect and Total Costs: Federal Funding Agency Supported Research, 1997-1999 (,000)**

University	97/98	97/98	97/98	98/99	98/99	98/99
	Direct	Indirect	Total	Direct	Indirect	Total
Toronto	93.4	37.4	130.8	107.0	42.8	149.8
<b>UBC</b>	<b>54.8</b>	<b>21.9</b>	<b>76.7</b>	<b>64.7</b>	<b>25.9</b>	<b>90.6</b>
McGill	56.4	22.6	79.0	63.7	25.5	89.2
Montreal	51.9	20.8	72.7	55.1	22.0	77.1
Alberta	41.6	16.6	58.2	46.0	18.4	64.4
Calgary	23.9	9.6	33.5	27.8	11.1	38.9
<b>Simon Fraser</b>	<b>11.5</b>	<b>4.6</b>	<b>16.1</b>	<b>12.4</b>	<b>5.0</b>	<b>17.4</b>
<b>Victoria</b>	<b>10.6</b>	<b>4.2</b>	<b>14.8</b>	<b>11.0</b>	<b>4.4</b>	<b>15.4</b>

The total cost figures from Table 7 represent the costs to the universities of the research undertaken, and the indirect cost estimates represent the shortfall under the current funding arrangements, with respect to federally supported research. The inclusion of provincial funded research through grants would increase the shortfall estimates accordingly.

### **Finding a Solution**

A solution is desperately needed if the research capacity and performance of universities is to be protected and sustained. Acknowledgment of the problem and of the need for a solution is widely shared. The House of Commons Standing Committees on Industry and Finance have both identified the problem as serious, with the latter having recommended the creation of a special fund to finance

***"As Canada anticipates its future prospects, it needs to look upon university research as a powerful stimulant for economic growth and social development. In the final analysis, the issue for society is not whether we can afford to invest in university research, but whether we can hope to prosper without it."***

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

infrastructure costs flowing from federal research grants. Officials at both the provincial and federal governments are developing a growing recognition of the need for an urgent solution. Nonetheless, the problem remains unresolved.

A number of universities have partially addressed the problem by moving to restore and increase core operating revenues through very large tuition fee increases, thereby increasing the flexibility they have to devote additional resources to research infrastructure. However, there are a number of problems with this approach. First, the tuition envelope is simply not large enough to generate resources sufficient to address the problem to any significant degree, regardless of how large the tuition increases are. Second, tuition is the one source of funds that should rightfully be primarily devoted to teaching and teaching related core functions. A significant shift of tuition revenues to research activity is bound to have a negative effect over the long term. Third, tuition increases are increasingly regulated by government. In the extreme, British Columbia tuition has been under a continuing freeze for a number of years, making it impossible to divert any such resources to this problem.

Any solution would be enhanced if the provincial and federal governments jointly agreed on a way forward. However, this is likely to take considerable time, given the complexity of such relations.

The initial step in finding a long-term solution likely depends upon action by individual provinces. There is a real, obvious advantage in such an initiative, since access to research dollars themselves is very competitive. Provinces that act to break the impasse assume advantaged positions compared to other provinces. Initiatives undertaken by Ontario, Quebec and Alberta make it clear that this reality is well understood in those jurisdictions.

### **Building on Opportunity**

In the 2000/01 provincial budget there was much to be applauded, particularly with respect to the strong recognition of the universities and the contribution they make to the province. Two features of that budget in particular stand out. The first is the strong commitment to the restoration of core operations, as evidenced by the increase in the general operating grants of universities. This has been an important step towards restoring the competitive position of the province's universities and it is expected that trend will continue.

The second is the commitment by the province of an additional \$117 million dollars over three years to the Knowledge Development Fund to assist in the financing of physical research infrastructure. This establishes a clear priority for research as a critical component of economic diversification in British Columbia. However, this commitment cannot be used effectively and completely unless steps are taken to address the infrastructure needs outlined in this paper. The priority placed on research

with this new funding could and would be maintained if additional resources were made available for that purpose.

Federal and provincial levels of government must both understand that the desired objective of enhanced research excellence is achievable only if the indirect costs of research are both recognized and supported. Support for indirect costs represents, in many respects, the “missing link” in the research excellence equation.

As noted above, some provinces have already recognized, and acted upon the need to address support for indirect research costs. Alberta and Ontario certainly have done so and the recent bold moves by the Province of Quebec clearly indicate recognition of the importance of research excellence and the value of leveraging related resources from the federal granting councils. Action by the Province of British Columbia to ensure increased support for indirect research costs would significantly enhance the capacity of B.C. universities at a time when it is more important than ever before to do so and would further reinforce the essential connectivity between research excellence, the pursuit of new knowledge and economic diversification.

Improving B.C.'s research success is a matter of pressing and substantial concern. Action is required on a number of fronts and urgent attention is required with respect to the provision of indirect costs. The University Presidents' Council urges the Government of British Columbia to address this issue on the basis of the following three recommendations.

### **Recommendation One**

That the Government of British Columbia act to address deficiencies in the funding of the indirect costs of university research by establishing a B.C. Research Challenge Fund of not less than twenty million dollars for the fiscal year 2001-2002.

### **Recommendation Two**

That the Government of British Columbia establish in cooperation with the University Presidents' Council of British Columbia the objectives and related funding requirements including those associated with the indirect costs of research, which will progressively bring university research funding up to levels comparable with, or superior to, other North American jurisdictions.

### **Recommendation Three**

That the Minister of Advanced Education, Training and Technology establish, together with the University Presidents' Council of British Columbia, the necessary monitoring and measurement indicators which will assist in confirming B.C.'s continuing competitive research performance capacity.

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September 28, 2000