INDIRECT COSTS PROGRAM

PROGRESS REPORT

FOR APRIL 1, 2009 TO MARCH 31, 2010

Canada

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Background

In 2001, the federal government provided a one-time investment of $200 million to alleviate some of the financial pressures associated with federally-funded research in Canadian postsecondary institutions. Subsequently, in 2003, the Indirect Costs Program (ICP) was established on a permanent basis and investments in the program have risen gradually, from $225 million in 2003-04 to $325 million in 2009-10.

These investments are used to cover a portion of the indirect costs[1] of research supported by the three federal funding agencies (the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council) at universities and colleges, and at their affiliated research hospitals and institutes.

Program objective

The objective of the Indirect Costs Program is to help universities, colleges and their affiliated research hospitals and institutes maintain a research environment that will enable them to make optimal use of the federal investment in academic research.

ACCOUNTABILITY AND EVALUATION

The program has adopted the following approaches to address the issue of accountability:

- institutions receiving program grants must prepare yearly reports;
- during site visits, program officials review how the institutions manage their grants; and
- the program itself undergoes internal audit and evaluation.

Outcomes reports

The program requires participating institutions to submit a yearly report on their outcomes, including a statement of account. The information obtained from the reports is intended to provide an account of federal funding and is a key element in the program's performance strategy.

The outcomes report provides quantitative and qualitative information on the impact that expenditures have had in five expenditure categories: research facilities; research resources; research management and administration; regulatory requirements and accreditation; and intellectual property management. The statement of account presents the amount of expenditures made with program funding invested by the institutions in each of the five areas.

Site visits

Since September 2006, program managers have visited 15 major research-intensive universities and their affiliated research institutes, three large universities, seven mid-size universities, and 15 small universities, colleges and CEGEPs. The visits have had the following objectives:

- to assess the effectiveness of the control measures and systems used to ensure compliance with the program's policies and regulations;
- to review the expenditures or the methods used to allocate funds, in order to ensure that they follow program guidelines;
- to discuss program-related issues and challenges; and
- to obtain feedback on the program's policies and guidelines and its financial management practices.

[1] Indirect research costs are an institution's administrative expenditures that support research but are not chargeable to specific research projects.

The visits also provide opportunities to observe the working relationships between universities and their affiliated research institutes; to share with them other institutions' best practices; to encourage them to give more details about the impact of their grants in their annual outcomes reports; and to adopt new approaches for communicating program outcomes.

Internal audit and program evaluation

An internal audit of the program was carried out in the fiscal year 2008-09, and a sixth-year summative evaluation of the program was completed in 2009. Overall, the reports on these activities presented a positive picture of the program in terms of its administration and relevance.

The summative evaluation included recommendations for strengthening the information base used to assess the program's impact (the report is available on the program's website at http://www.indirectcosts.gc.ca/publications/index_e.asp). In response, the program's management staff established a working group of representatives of various organizations, including universities, the Association of Universities and Colleges of Canada (AUCC), the Canadian Association of University Business Officers (CAUBO), and the Canadian Association of University Research Administrators (CAURA). The working group has been mandated to define a set of parameters for use in assessing the state of the research environment at Canada's universities every five years.

OVERVIEW OF INSTITUTIONS' EXPENDITURES IN FISCAL YEAR 2009-10

As a whole, institutions funded by the program use their grants largely for management and administration, and for research facilities. These two categories combined accounted for 67 per cent of total spending in 2009-10. Figure 1 shows the proportion allotted to each of the five expenditure categories. This breakdown has remained fairly stable since the program's inception, with a gradual increase in the proportion of funds allotted to regulatory requirements and accreditation, as well as to management and administration. However, as funding from the program covers only a portion of the indirect costs of research borne by institutions, it is difficult to infer if this spending reflects trends in the actual costs or total investments of institutions in these areas.

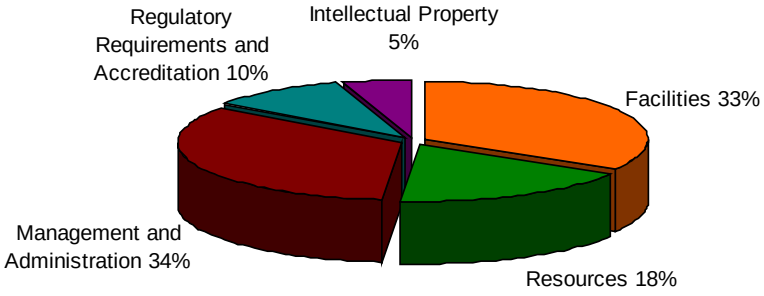

Figure 1: Proportion of grants allocated to each expenditure category, fiscal year 2009-10

Institutions of different sizes tend to allocate their funding differently with respect to the five expenditure categories. Figure 2 illustrates this difference, comparing the investment patterns of the four sizes of institutions described in Table 1 and their affiliated research institutes. In general, small institutions allotted a larger share of their Indirect Costs grants to the management and administration category than did large and research-intensive institutions, while large and research-intensive institutions directed a greater proportion of their funds to the facilities category than did

small institutions. Differences in the proportion of the grant allotted to each expenditure category can be observed among institutions of the same type. This variability is greater for the intellectual property management category and could be explained, in part, by the fact that some institutions do not have a technology transfer office and do not allocate funds towards this area.

In the fiscal year 2009-10, 19 institutions signed agreements with research hospitals or health research institutes. Expenditures by these affiliates accounted for 15.6 per cent of the program's total budget and were spent primarily in management and administration. Affiliates also invested more heavily in regulatory requirements and accreditation than did all other types of institutions.

Table 1: Institution types and proportion of total program budget received by each type

Type	Criterion[2]	Number of institutions	Proportion of program budget
Small	ICP grant of less than $100,000	51	0.4%
Mid-size	ICP grant of $100,000 to $1 million	27	3.5%
Large	ICP grant of $1 million to $3 million	15	7.4%
Research-intensive	ICP grant of more than $3 million	28	88.7%

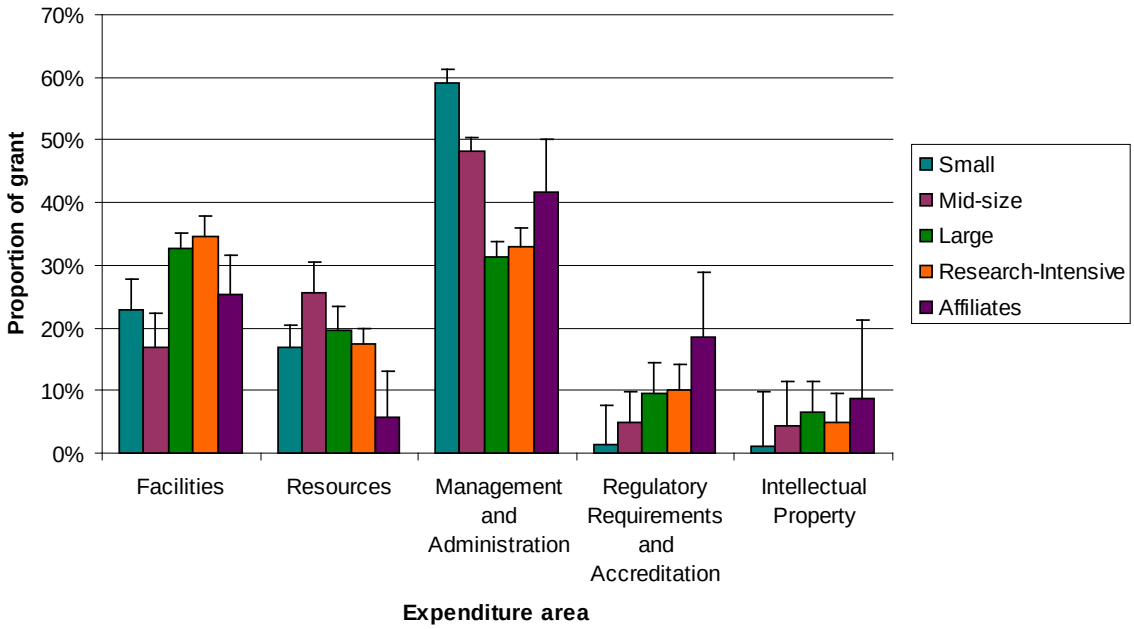

Figure 2: Proportion of grants allotted to each expenditure category, by size of institution. The bars represent standard deviation of the means.

[2] Institutions have been categorized according to the amount of program funding they received. The figures shown are used solely for purposes of analysis in this report.

IMPACT OF EXPENDITURES

Impact by expenditure category

Canadian research institutions consider the funding provided by the ICP as critical to the success of their research enterprises. Due to the synergies the ICP intentionally creates with other federal funding and its multi-year nature, however, the annual impact of the program can be difficult to isolate and evaluate. In order to account for this, the institutions' Outcomes Reports provide very helpful qualitative information and examples regarding their investment in the five expenditure categories. These are examined in the following sections.

Research facilities

Maintaining modern working space and equipment is critical for a successful research enterprise. From investing in laboratory renovations to recruiting the required skilled technicians, institutions of all sizes face the challenge of maintaining suitable research facilities in the face of increasing research costs. The majority of institutions cited operating costs, including items such as electricity and heating, as the largest category of expenditures in this investment area. Other highlighted spending included the costs associated with the maintenance of specialized research equipment, as well as the basic up-keep of research space. All these factors contribute directly to researchers' productivity and ability to obtain more research funding, as well as to the institutions' overall ability to attract new talent.

The Biotron Experimental Climate Change Research Facility, the world's first to allow for the reproduction of mini-ecosystems at scale, also benefited greatly from Indirect Costs last year. In addition to support for much-needed security systems within the facility, the Biotron used funding to establish an Incubation Stage System, which allows researchers to quickly capture data from live cells and tissues over extended timeframes.

The University of Western Ontario, Ontario

A significant portion of the Indirect Costs grant was used for the operation of research facilities. This included the International Test Centre, which is a world class research centre on CO_2 capture and storage.… This combination makes this centre unique in the world, developing technologies to reduce carbon dioxide emissions into the atmosphere and develop new storage and disposal methods for gases. The Indirect Costs grant has allowed the institution to offset some of the significant expense in the operation of this building.

University of Regina, Saskatchewan

Indirect Costs funding for facilities has a major impact on the quality of research work performed [at the university]. First, it helps significantly to prolong the useful life of laboratories and equipment, which in some cases have been in place for many years. Further, the funding helps to adapt and upgrade the equipment and laboratories to meet research teams' different needs, which change with new advances in science. The teams thus are able to pursue their high-quality research activities, and this helps to attract and retain researchers by meeting their space and resource requirements.

Université Laval, Quebec

Research resources

Access to current, wide-ranging knowledge resources is essential to producing the high-quality, high-impact studies that benefit Canadians. Accordingly, the majority of institutions spent the largest portion of ICP funds in this category on library holdings. In particular, many institutions cited maintaining or upgrading electronic journal access as a major cost driver. These resources provide

researchers with access to hundreds of journals and thousands of articles across a wide range of disciplines right at their desktop, saving time and increasing efficiency. Larger institutions also commonly used a share of the funds for the improvement of high-speed networking capabilities that allow for the quick and effective sharing of large amounts of data between researchers, institutions and regions. All of these initiatives help to support researchers' work and are important factors in recruiting and retaining faculty and attracting research funding.

[Without funding from the Indirect Costs Program] the library would have cancelled a number of important resources to balance our budget. Researchers would have had to rely upon slower and more expensive alternatives for acquiring needed information (e.g. interlibrary loans or visiting other campuses that could make material available) or doing without the information. This would have had a detrimental impact on the outcomes of their work and their efficiency in producing research results.

Memorial University, Newfoundland

In the 2009-2010 year, [Indirect Costs] funding was instrumental in ensuring that the information services provided by the Hospital for Sick Children to researchers remained cutting-edge. Specifically, ICP funds were used to support the Research Information Technology Facility (Research IT), which is a core facility at the SickKids Research Institute, specialized to support the unique information technology needs of the Institute.

University of Toronto, Ontario

Research management and administration

Institutions agree that administrative support is an essential service for productivity because it relieves researchers of many administrative tasks. Across institutions of all sizes, administrative support aids researchers in preparing grant applications and managing grant funds. The largest portion of funding in this category went to recruiting and retaining the human resource expertise required in the complex environment of research management. For smaller institutions, this typically meant the recruitment and establishment of a dedicated research administrator or office. For larger and research-intensive institutions, funding was associated with the recruitment and training of specialized research managers and investment in IT systems to streamline grant applications and research funding tracking.

The grant has been key to the ongoing success and growth of the research institute at Yukon College. The research department does not have core funding and the grant is used to subsidize the core human resources and payroll for the institute. Without this funding the growth of the research mandate at Yukon College would be hampered.

Yukon College, Yukon

[The Indirect Costs Program] investments have been vital for research productivity because they have allowed the Office of Research Services to retain on staff four Grants Facilitators who are vital in informing and advising researchers of grant opportunities, partnership development and research proposals. As a result, researchers no longer bear the time investment to be aware of all new funding opportunities and trends in grant application techniques.

Brock University, Ontario

Regulatory requirements and accreditation standards

In an effort to ensure the safety of researchers and research staff, and the ethical treatment of research subjects, institutions must meet an increasing number of regulatory and ethical standards. In recent years, the different levels of government have introduced new regulatory requirements regarding, for example, the protection of animals, the use of human beings in research and the use of hazardous substances. Accordingly, the amount of time and resources that must be expended in order to comply with these standards has also been increasing. For this reason, institutions directed the largest share of their spending in this expenditure category towards the creation and support of regulatory bodies such as research ethics boards, and provide teaching relief to those faculty members who sit on these boards. For research-intensive institutions a large portion of the funds was most frequently devoted to technical support for animal care, especially for the salaries of veterinarians. The upgrading of animal housing facilities to comply with new regulatory standards was also a regularly mentioned use of funds.

> An Ethics Officer position was created to help guide the Research Ethics Board and work with researchers to guide them through the ethics process and to educate researchers and faculty on the roles and responsibilities they hold in these areas. This has done a lot to pave the way for a positive approach to ethics and has helped prevent ethics being seen as a barrier to research. Without the [Indirect Costs Program], this would have been extremely difficult to accomplish.
>
> **Vancouver Island University, British Columbia**
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> If [Indirect Costs Program] funds were not available to support a full time Ethics Coordinator, the negative impact on turn-around time for review of protocols would be so severe that the ability of faculty members to conduct research in a timely fashion would be jeopardized.
>
> **Ryerson University, Ontario**

Intellectual property management

Transferring knowledge from academia to a broader range of sectors, including the private, public and not-for-profit sectors, creates many economic, social and cultural benefits for Canadians. Institutions recognize the importance of transferring knowledge, sharing their research discoveries through such activities as publishing, licensing, forming spin-off companies, and other forms of engagement with non-academic sectors. With the help of ICP funding, many research institutions continue to strive to maximize the impact of their research and the return on the money invested in research grants. Across institutions of all sizes, the greatest portion of funds in this category was devoted to the development and support of technology transfer offices. Primarily invested in the payroll for specialized technology transfer personnel, funding was also devoted to technology licensing and private sector partnerships. By providing funding in support of these services, institutions underscored the significant economic and social benefits the ICP program has on them and the local community.

> In 2009-10, Acadia allocated $45,000 (6%) in Indirect Costs Program funding to Acadia's Office of Technology Transfer and Innovation (OTTI)…. OTTI filed patent applications in the U.S., Europe and Japan on behalf of a faculty member who has developed an exciting new bionanolithography platform technology that is expected to have a profound impact on the life sciences sector, and may ultimately change the way we understand biological systems, diagnose and treat diseases, and manage the environment.
>
> **Acadia University, Nova Scotia**

Flintbox is an … initiative designed to provide a central repository of Canadian university technology opportunities to make it easier for Canadian industry (particularly SME's) to find technologies to meet industry needs. The technology transfer staff members hired from the ICP funding prepared, submitted, and updated information concerning Waterloo's technology opportunities in order to fully participate in the Flintbox technology marketing initiative. Without the support from the ICP, Waterloo's involvement with the Flintbox web portal initiative would have been nominal and a much lower priority.

University of Waterloo, Ontario

General impact of investments

While the five expenditure categories demonstrate the immediate and direct outcome the program has on postsecondary research, the ICP ultimately aims to improve the overall ability to conduct research and to recruit and retain world-class researchers. Table 2 shows the institutions' responses regarding three general impact categories. Larger institutions, because they receive larger grants, appear to be more able than smaller institutions to identify positive impacts. In general, however, small and mid-size institutions also identify the ICP funds as having a positive effect on their overall research capabilities, playing a key role in implementation and maintenance of their emerging research programs.

Table 2: Proportion of institutions reporting general positive impacts of their grants, by institution size

General impact	Small	Mid-size	Large	Research-intensive	Total
Securing additional funding	70%	89%	87%	100%	86%
Making strategic investments possible	39%	63%	80%	82%	66%
Recruiting and retaining researchers	74%	89%	93%	100%	89%

A number of institutions noted the growth in their research capabilities since the inception of the program. Some went further to emphasize that many of the research services and funding opportunities they now enjoy would not have been realized without the support of the ICP funds. These institutions recognize the vital role played by the program grants over the years in helping them to develop their research activities.

The majority of institutions agreed that the ICP funds contributed to their ability to attract and retain world class researchers. Many factors come into play when recruiting researchers and the institutional research environment and services offered to the researchers is usually one of them. The ICP funds can help institutions provide an adequate and supportive research environment that will attract new researchers and retain established ones.

The ability of institutions to more fully address the indirect costs of research also contributes to their capacity to attract new funding. Whether it is directly through supporting research administration and grant writing, or indirectly by helping to maintain the infrastructure necessary to support new initiatives, the program is cited by many institutions as an important factor in gaining new sources of funding. For some larger institutions, the ICP grant was especially supportive in producing new, sustainable research revenue through technology licensing and the attraction of international investors.

The [Indirect Costs Program] grant permits us to partially meet these needs without drawing from critical operating funds; it is no exaggeration to say that without the support of ICP funding the research enterprise would be seriously compromised.

Queen's University, Ontario

Research at UQAM is conducted largely within recognized centres. Among other things, Indirect Costs funding has made it possible to strengthen specific research niches at UQAM by providing the means to better support research infrastructure and strategic groups of researchers, including 20 inter-institutional research centres as well as 6 interdisciplinary institutes. The infrastructure is an asset in building a critical mass of high-quality researchers and attracting and retaining faculty, postdoctoral trainees and graduate students.

Université du Québec à Montréal, Quebec

[A research] team reported success in testing the DCA compound in humans. This research received significant national and international attention and [the team] has now been receiving hundreds of thousands of dollars from the local community as a result of this attention. [This] research relied upon services provided by a number of units that receive significant [Indirect Costs Program] funding, including the Health Sciences Laboratory Animal Services, the Research Ethics Office and Alberta Health Services.

University of Alberta, Alberta

Since the onset of the Indirect Costs Program in 2001/02, the University has seen an increase of over 50% in its research base ($102.2M in 2001/2002 vs. $172.1M in 2008/2009). While there are clearly other factors that have contributed to this increase, there is no doubt that the ICP has played a critical role in this increase.

University of Manitoba, Manitoba

CONCLUSION

Despite differences in funding amounts and spending distribution, the Indirect Costs Program funds have had positive effects on the research capacity in all five expenditure categories for the entire range of institutions. The ICP grants have allowed Canadian research institutions to raise their research profiles both at home and abroad, by supporting public outreach and private partnerships. This has been especially true for small and mid-size institutions with relatively young research programs. While the program has received predominantly positive feedback from institutions, demonstrating their general appreciation of how the program is run and administered, some concerns have been raised. Rapidly growing institutions raised concerns over the three year averaging calculation used to determine grant amounts. They highlighted that in institutions with rapidly expanding research programs, the ICP funds provided are consistently lower than they would be if funding calculations were based on the current level of research being undertaken and, therefore, the higher associated indirect costs.

Generally, however, institutions highlighted the indispensable contribution the ICP has made during these difficult economic times in ensuring that they are able to achieve both their research and teaching mandates and to continue to enhance their vital role in Canadian society.