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ABSTRACT

This paper is intended to provide a solid base of information about the treatment of indirect university research costs in various jurisdictions and to highlight some of the factors that have contributed to increased interest in the issues surrounding the funding of indirect costs of research. University research in Ontario has continued to evolve toward science based "resource intensive" research. The Research Overheads/Infrastructure Envelope established in 1987 is not sufficient for current needs, and it does not reflect standard indirect cost rates. The new Ontario Research Performance Fund will enhance provincial support for university research, but it will not alleviate the full indirect cost pressure associated with growing research sponsorship. The need to provide additional resources is pressing, and it is occurring at a time when large-scale faculty renewal is being planned and when a major increase in student demand is anticipated. An appendix compares research overhead rates at various Ontario universities. (SLD)

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ED 456 713

INDIRECT COSTS OF UNIVERSITY RESEARCH

Background Information

JULY 2000

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INDIRECT COSTS OF UNIVERSITY RESEARCH

Background Information

Report prepared by
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JULY 2000

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This report was prepared by Dr. Tony Vander Voet during a secondment to the Council of Ontario Universities from the Ministry of Energy, Science and Technology.

Introduction

Much of the material in this background paper was originally prepared for the Working Group on University Research, a joint Council of Ontario Universities and Ministry of Energy, Science and Technology initiative. The express purpose of the paper was to provide a solid base of information about the treatment of indirect costs in various jurisdictions and highlight some of the factors that have contributed to increased interest in the issues surrounding the funding of indirect costs of research. This paper has been updated to reflect recent budget initiatives at the federal and provincial level.

1. University Research: An Overview

Research carried out at Ontario universities can generally be divided into a number of categories:

Core research is generally curiosity-driven (basic) research, which the Bovey Commission considered essential "to any institution worthy to be called a university" and which "must coexist with educational enterprise across all disciplines."[1] In commenting on the core research function, the Commission wrote: "Scholarly inquiry, critical appraisal, and weighing of evidence, for instance, are essential to every field of academic endeavour." This research function is supported from the general operating grants provided by the province to the universities.

Sponsored research can be considered as basic or applied research. It receives support largely through peer-reviewed **grants** obtained from the federal granting councils (NSERC – National Science and Engineering Research Council, MRC – Medical Research Council, and SSHRC – Social Sciences and Humanities Research Council), as well as support from research foundations and the private sector.

Research programs supported by provincial programs such as the Ontario Research and Development Challenge Fund (ORDCF) in partnership with institutions and the private sector can also be considered sponsored research.

The 1984 Bovey Commission stressed the need for additional federal and provincial funding to support what it called "**resource-intensive** research" noting that:

> "*...the most effective steps to restore research capacity to levels compatible with the needs of a developed country will consist in funding measures that will take into account the infrastructure, overhead and capital costs of research together with some adjustments to recognize the needed expansion in activity of additional faculty committed to research.*

[1] The Commission on the Future Development of the Universities of Ontario, Ontario Universities: Options and Futures, December, 1984; Edmund C. Bovey, Chairman.

All these improvements will be needed if the nation and the province are to compete with the requisite degree of effectiveness in the international arena. Such expenditures should be considered as investments *required to support the intermediate and longer term social and economic development of Canada and of Ontario."*

Contract research is generally applied research performed by the institution on behalf of, and funded by, industry, provincial or federal agencies or other funding sources.

The cost of performing research can be divided into two categories:

Direct costs which include the salary and benefit components of the researchers (in proportion to the time spent on the research), payroll costs of post-doctoral fellows (PDF's) and research assistants, equipment and capital expenditures, consultants, materials and supplies, travel. [2]

Indirect costs, sometimes referred to as 'Facilities and Administrative' costs or 'Facilities and Services' costs, include costs of the physical facilities and administration, research infrastructure (department/faculty), libraries, and computing facilities.

The direct and indirect costs of core research are presumed to be covered by the general operating grants to the universities from the provincial government. Sponsored research and contract research result in incremental direct and indirect costs. Unless recovered directly from the sponsoring /contracting agency, foundation, business or other external funding source, such costs must be covered from basic university operating revenues.

2. Sources of Funding for the Direct and Indirect Costs of Research

Basic University Research

A large proportion of the direct and indirect research costs of Ontario universities is supported out of the operating revenues of the universities themselves. These revenues include the "block grants" from the provincial government, tuition fees and other revenue sources. For example, in 1992-93, one estimate of the cost of university research in Ontario was $1,432M including faculty salary components, and represented about 36% of the total operating expenses of $3,990M.[3] It was further estimated that 43% of the "block grant" of $1,975M ($849M) could be allocated to support of the university research function.[4] Using this approach and applying it to the 1999-2000 basic operating grant of $1,446M, an estimated $622 million is now allocated to the research function.

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[2] This is generally referred to as Total Direct Costs = TDC.

[3] "An Analysis of the Costs of Teaching, Research and Community Service", Technical Paper for the Task Force on Resource Allocation, OCUA, August, 1994.

[4] Compared to $233M total sponsored research funding from the federal granting councils in that year.

Sponsored Research - Non-contract

Most of the direct costs for sponsored research are generally supported by the federal granting councils, or by grants from the private sector, foundations, etc.

Direct costs supported through the granting councils generally include salaries for research associates (graduate students, post-doctoral fellows), appropriate travel, equipment and materials, and costs of communicating research results. The grants do not provide for salary contributions for principal investigators (grantees), although SSHRC does include a component to cover release from teaching duties, i.e., Research Time Stipend.

The federal granting councils do not allow for indirect costs, and assume such costs are covered by the institution receiving the grant.

In addition to support for direct costs, private sector grants often allow a small overhead component, e.g., 10-15% TDC. Foundation grants may allow for indirect costs at a rate determined by the specific foundation.

In 1987-88 Ontario created the Research Overheads/Infrastructure Envelope (ROIE) to help improve the capacity and capability of the universities to conduct research that contributes to Ontario's economic growth. The amount of the ROIE available to each Ontario university is proportional to that university's "share" of selected[5] federal granting councils' peer-adjudicated sponsored research grants (SSRG) generally given for basic research by individual researchers and research teams.[6] Federal granting council sponsored research funding and ROIE values are tabulated in Table 1.

Where Ontario is a partner in the sponsored research, including matching grant programs through URIF, the Ontario Centres of Excellence program, or the Ontario Research and Development Challenge Fund (ORDCF), the province provides for indirect costs at a rate of about 30%TDC.

The Ontario Research and Development Challenge Fund was created in the 1997 Ontario Budget as a $500M, 10-year program to support Ontario research in partnership with research institutions and the private sector. Early in the evolution of its policies and procedures it was agreed that ORDCF

[5] It should be noted that of the peer-reviewed sponsored research funding provided to Ontario universities by the federal granting councils, not all grants are used to calculate the distribution of the ROIE. For example, in 1997-98 total sponsored research in Ontario was $225,754,000 of which $178,103,000 was used in calculating the ROIE distribution. It appears that funding for basic research by individuals or groups is included whereas infrastructure-related funding, e.g., NSERC major equipment grants, are not included.

[6] The Ontario Ministry of Training, Colleges and Universities (formerly Ministry of Education and Training) uses the three-year average, slipped two years, of SSRG to determine the share of ROIE that each university receives. For example, the 1999-2000 average is based on 1995-96, 1996-97 and 1997-98 data.

funds should be used primarily to expand the research capacity of institutions, as opposed to funding existing research initiatives. This is reflected in the ORDCF decision to allow for an indirect cost rate to be applied only to incremental costs, i.e., total expenditures for additional research support (new hires), equipment, materials and supplies, travel, consultants, etc. The ORDCF supports salary costs for both existing and new primary researchers (faculty members) and research associates. However, salary support which qualifies for overhead includes salary components only for new principal investigators/faculty as well as research associates.

Table 1: Sponsored Research Grants (SSHRC+NSERC+MRC) and the Ontario Research Overheads/Infrastructure Envelope (ROIE)
1987-88 to 1999-2000[7]

	SSRG[8] In-year Data	TSRG[9] In-year Data)	SSRG (3-Year Average, Slipped 2 Years)	ROIE	ROIE/SSRG (3-year avg., slipped 2 yrs)	ROIE/SSRG In-year data	ROIE/TSRG In-year data
1987-88	$147,094	$173,481	$124,191	$25,000	20.1%	17.0%	14.4%
1988-89	$157,694	$191,860	$132,706	$25,125	18.9%	15.9%	13.1%
1989-90	$173,675	$204,452	$139,691	$27,170	19.5%	15.6%	13.3%
1990-91	$175,003	$215,391	$147,633	$28,447	19.3%	16.3%	13.2%
1991-92	$176,281	$223,708	$159,488	$30,296	19.0%	17.2%	13.5%
1992-93	$182,303	$233,064	$168,791	$30,569	18.1%	16.8%	13.1%
1993-94	$187,351	$252,116	$174,986	$28,337	16.2%	15.1%	11.2%
1994-95	$187,354	$250,355	$177,863	$27,839	15.7%	14.9%	11.1%
1995-96	$182,687	$248,302	$181,979	$27,477	15.1%	15.0%	11.1%
1996-97	$178,853	$239,828	$185,670	$22,990	12.4%	12.9%	9.6%
1997-98	$178,103	$225,754	$185,798	$27,477	14.8%	15.4%	12.2%
1998-99			$182,965	$27,477	15.0%		
1999-2000			$179,881	$27,752	15.4%		

[7] Adapted from Ontario Universities – 1998 Resource Document, Council of Ontario Universities.

[8] NSERC+SSHRC+MRC Selected Peer-Adjudicated Sponsored Research Grants to Ontario Universities. In the COU Resource Document, the acronym PSARG is used to represent the grants selected for the ROIE calculation. This seems to imply that the grants not selected for the calculation are not peer-reviewed –which is not the case. This document uses the acronym SSRG (selected sponsored research grants) to reflect the actual current situation.

[9] NSERC+SSHRC+MRC total sponsored research funding to Ontario.

Sponsored Research - Contract

Direct costs for contract research are generally funded by the private sector or by the sponsoring agency (federal, provincial) – sometimes in partnership.

The universities make every effort to recover the indirect costs involved, depending on the limits imposed by the funding source or the results of contract negotiation. For example, federal government contracts, which are governed by the Department of Supplies and Services (Public Works and Government Services Canada)[10] allow for recovery of indirect costs at the rate of 65% payroll costs (salaries and benefits) for on-campus work, 30% payroll costs for off-campus work and 2% travel. Allowable direct costs include payroll (salaries and benefits), materials and supplies, travelling expenses, consultant services and equipment.

Although eligible as direct costs, apparatus and equipment acquisition expenses **are not** used to calculate allowable overhead; further, if the equipment is bought, it remains the property of the Crown. If the equipment is a "make", the university is allowed the costs of parts and labour including the 65% overhead, with ownership and disposal the same as for bought equipment. For in-house consultants at the standard rate of pay, the 65% overhead is applicable; outside consultant costs are allowable as direct costs, but do not allow overhead.

CIDA generally allows 54% payroll for work done in Canada and 35% payroll for work outside the country.

For contracts with the private sector or with Ontario agencies, most Ontario universities apply the federal government rate (based on payroll) or a rate of 30-40% of TDC. Where the allowable/negotiated rate is less, the university must make up the difference.

3. Other Research Support

Federal Government

The Networks of Centres of Excellence (NCE) program,[11] which has been operating successfully for ten years, was made permanent by the federal government in 1997, with an annual budget of $47.4 million. In its 1999 budget, the federal government announced that the NCE Program budget would be increased by $90 million over the next three years, starting in 1999-2000. The NCE program

[10] See Public Works and Government Services Canada Supply Manual – sections 10.090-10.099 (can be located at web- site: w3.pwgsc.gc.ca/sos/text/sm/en.

[11] The NCE program is supported by the three federal granting councils in conjunction with Industry Canada.

follows the granting councils in their definition of eligible and ineligible costs, i.e., support is provided for most direct costs while indirect costs are ineligible for support.

Created in 1997, the Canada Foundation for Innovation (CFI) is now expected to provide $1.9 billion to support research infrastructure in Canada as a result of a further commitment in the Federal 2000 Budget. Ontario can reasonably expect to receive about 40% of CFI funds, and in the first round of competition received awards totaling more than $160 million to Ontario institutions. These awards, which support research infrastructure proposals (equipment, construction, renovation, etc.) do not provide for either operating or indirect costs.

In its October 12, 1999 Throne Speech, the federal government announced the creation of the 21st Century Chairs for Research Excellence program. This program will fund the creation of 1,200 chairs over the next three years at a cost of $180 million per year with an additional 800 chairs to be added as soon as possible, costing a further $120 million per year.[12]

Examples of eligible expenditures include salary and benefits of the incumbent and members of his/her team; recruitment and relocation expenses; costs associated with fitting research and office space for the incumbent and his/her team; administrative costs related to the research; acquisition, maintenance, operation of research equipment; and other costs of research (such as travel, workshops, computing, consumables, publication costs, material and supplies, etc.)[13]

Ontario Government

The Premier's Research Excellence Awards (PREA) program was introduced in the 1998 Ontario Budget as a $50M, 10-year program to reward research excellence. PREA provides support for salaries and research-related expenses (including travel) to allow researchers in the early stages of their academic/research careers to hire research associates (graduate students, post-doctoral fellows, etc.). The PREA program does not allow for salary contributions to the award winner (principal investigator). In establishing its policies and procedures for PREA, the government wanted to ensure that the full value of the award would be invested in the eligible direct costs, and decided to exclude overhead (indirect) costs as eligible expenses. The PREA program has been very successful, and in the 2000 Ontario Budget, its annual allocation was doubled to $10M.

The recently created (1999) Ontario Innovation Trust (OIT), with an initial capitalization of $750 million,[14] was designed to support research infrastructure – largely through matching of Canada

[12] Information on the 21st Century Chairs program, including expenditure policies, is available on the SSHRC website, "www.sshrc.ca".

[13] These costs, which are sometimes referred to as "indirect", could also be considered to be "direct" costs of doing research (and, as such, are eligible in programs such as the Ontario Challenge Fund). Facility and administration costs (i.e., overhead) do not appear to be eligible.

[14] Initial capitalization of $250M was increased by an additional $500M in the 2000 Ontario Budget.

Foundation for Innovation (CFI) awards to Ontario institutions. Operating under guidelines similar to those of the CFI, OIT awards would not contain an indirect cost component.

4. Indirect Cost Rates and a Review of Policy Developments

Indirect cost policies and rates for the 17 universities in Ontario along with other Canadian universities and U.S. institutions, are listed in Appendix 1. Policies and rates vary among institutions, but generally either follow federal contract guidelines or try to recover a minimum of 30-40% of TDC. The indirect costs policies and rates for Ontario universities are similar to those in other parts of Canada.

In the United States much of the support for university-based research comes from the federal government via its agencies, e.g., the National Institutes of Health (NIH) and the National Science Foundation (NSF).

Allowable direct costs include all expenses required to carry out the research, including salaries (or part-salaries) of principal investigators. Expenditures for special purpose equipment used only for research[15] are allowed as direct costs with the approval of the sponsoring agency. Capital expenditures for general purpose equipment (e.g., office furnishings, air conditioning) are not allowed unless approved in advance; capital expenditures for improvements to land, buildings or equipment are also not allowed unless approved in advance. In all cases capital expenditures are not allowed in the calculation of indirect costs.

Indirect costs, generally referred to as Facilities and Administration (F&A) costs, are eligible for support under the grant. Indirect cost rates are negotiated by the institutions with the US Department of Health and Human Services (HHS) or the US Department of Defense's Office of Naval Research (DOD) and are used in preparing the grant application.[16] Indirect rates are negotiated in accordance with centralized policies,[17] and are generally based on" modified total direct costs".

Modified Total Direct Costs (MTDC) – consist of all salaries and wages, fringe benefits, materials and supplies, services, travel, and sub-grants and subcontracts up to US$25,000 of each sub-grant or subcontract. Equipment, capital expenditures, charges for patient care and tuition remission), space rental costs, scholarships and fellowships, as well as the portion of each sub-grant or subcontract in excess of US$25,000 are excluded from MTDC.

In general F&A rates vary among institutions (and in some cases between units of the same institution) and range from about 30% MTDC to over 70% (e.g., 65%MTDC at Harvard and 80% at Harvard Medical School) for on-campus work. Off-campus rates are generally lower. Since public universities in the US

[15] Equipment being defined as an article with a useful life of more than one year and costing $5000 or more.

[16] In cases where neither the HHS nor DOD provide funding to the educational institution, the agency defaults to HHS.

[17] For a detailed description of allowable and excluded direct and indirect costs, see the United States Office of Management and Budget (OMB) Circular A-21 "Cost Principles for Educational Institutions" (Web-site: www.whitehouse,gov/omb/circulars/a021/a021.html)

have an income stream from state governments which can in some cases be used to defray indirect costs, the F&A rates are often lower than those for private institutions.[18]

Indirect cost rates for research sponsored by non-federal government sources, i.e., private sector, foreign governments, local governments also vary between 30-55%. F&A rates for research sponsored by foundations follow foundation guidelines.

In 1982, the Canadian Association of University Business Officers (CAUBO) published a report on the costs of university research in Canada. Based on the results of the study, which included 14 universities across Canada (including McMaster, Toronto, Waterloo, Western Ontario and York), the report noted that the indirect costs of research represented about 50% of the direct costs of research (i.e., 50%TDC)[19] or about 68% of direct payroll expenditures (DPE).

The estimated indirect costs, expressed as a percentage of either "total" or "direct payroll" costs, did not take into account capital costs.[20] However, data on insurance replacement values of capital assets was used to develop an average cost for replacement. The indirect costs related to capital were estimated to be 29% TDC or 36% DPE. The Report emphasizes that these values can only be viewed as "*gross representations of the over-all replacement values of capital assets of the universities. They are included in this Study to emphasize that a factor for replacement should be included as an integral part of support or "overhead" considerations if the full cost of the research activity is to be recognized.*"

It is also interesting to note that the relationship of indirect to direct costs for research in the humanities and social sciences was 57%TDC, whereas in the physical and applied sciences it was 47%TDC. It was suggested that support costs necessary for the humanities are applied to a smaller direct cost base, whereas in the case of the sciences the direct costs contain significant elements other than faculty payroll costs, thus enlarging the base.

The authors of the Report also noted that:

> "*No attempt has been made in this Study to develop a proxy or formula to recognize the cost of faculty time that would have to be added to the support of sponsored research grants, if the external funding agency intended to reimburse the university for such costs...It is known that the faculty time involvement is not necessarily related to the dollar value of the grant and it is*

[18] See the document "Indirect Cost reimbursement in the U.S.A.: Facts and Fiction" published by the Association of Universities and Colleges of Canada

[19] Included in the direct costs of research were the costs of allocated research, sponsored research, non-sponsored research, faculty salaries and benefits, staff salaries and benefits, and other expenses.

[20] The CAUBO report noted at the time that "The accounting treatment and valuation of capital assets in Canadian universities does not follow a consistent pattern or generally accepted guidelines."

questionable whether time or cost allocation to grants on an overall collective basis is meaningful or appropriate.

"It is, however, appropriate to recognize that the use of a ratio of indirect to direct payroll costs implies the inclusion of "true" or full payroll costs. At the present time certain agencies do not provide funding in their grants or contracts for the element of faculty time costs. To the extent that the payroll costs included in research grants or contracts do not represent the "true" or full costs, then a factor for such direct payroll costs should be included for the determination of the indirect support values, whether or not the university is to be reimbursed for the full payroll costs."

In its 1984 report, "Ontario Universities: Options and Futures", the Bovey Commission defined two categories of research activities: (1) resource-intensive research[21] and (2) core university research function. The report noted that in 1982-83 Ontario Universities retained only 60% of the 1970 capacity to support sponsored research. It was also noted that in order to sustain the level of research, resources were being "siphoned off" from other areas of the institutions.

The Commission addressed the issue of research costs in Ontario universities in terms of those involved heavily in resource-intensive research and those primarily involved in instruction-intensive initiatives. The Commission report indicated that such differences needed to be recognized in funding principles.

In its Recommendation # 40...

"The Commission, having regard to the importance both nationally and provincially of enhanced support for resource-intensive research, as distinct from research directly related to education, and having in mind also the urgent need to meet the indirect costs of such research, recommends that:

1) *the Province ask the federal government to provide overhead costs for grants from the federal granting councils, by block grants to institutions based on 50%[22] of the average of the direct grants received in the preceding three years from the federal granting councils by*

[21] The Bovey report defines **"resource-intensive research"** (in section 3.1.2): *"A characteristic of many of these research fields is their heavy demand on highly qualified manpower, physical facilities, sophisticated equipment and efficient information retrieval systems and their separation from education in terms of resource requirements."*

[22] This reflects the CAUBO estimate of indirect costs as 50%TDC.

each institution. (Based on the latest figures available, those of 1982, the requirement would be $71.4 million.)[23]

2) *in order to cover the marginal costs of faculty time in such research, the Province make an additional annual allocation equivalent to 38%*[24] *of the average of the direct grants received in the preceding three years from the federal granting councils by each institution (In relation to the 1982 grants, this sum would be $54 million.)*[25]

3) *contract research undertaken on behalf of federal or provincial departments be supported by full coverage of indirect costs at the rate of 117% of direct costs."*[26]

The Research Overheads/Infrastructure Envelope (ROIE) was established in 1987 with an initial allocation of $25 million.

The Advisory Panel on Future Directions for Post-secondary Education chaired by David C. Smith (1996) addressed the issue of research funding and policy – specifically the funding of indirect costs. In its report, Excellence, Accessibility and Responsibility, the panel noted that the size of the ROIE "does not relate to the full indirect cost of research being conducted, and the shortfall has contributed to a deteriorating infrastructure. In turn, the lack of a strong research infrastructure has weakened the ability of universities to attract and retain top researchers and scholars." They further noted that the consequence of inadequate overhead/infrastructure support was a "disturbing reduction in Ontario universities' share of the total funds awarded to Canadian universities by the federal government" (42% in the early 1980s to 36% in the early 1990s). In its recommendation #5, the panel wrote:

"We recommend that the Government of Ontario increase the size of the Research Overheads/Infrastructure Envelope from its current level of about $23 million to about $100 million annually.

We recommend that Ontario develop a research policy. This development is urgent in view of the growing concerns about Ontario's competitive position on research. The policy should

[23] Using the total federal granting council sponsored research figures for 1995-96 through 1997-98, this amount would now be $119 million.

[24] The Bovey Report notes that "*The CAUBO study also drew attention to the costs of faculty time for such research, broadly estimating it at 76% of direct research costs*". The Commission suggested that half of this figure (i.e., 38%TDC) would represent the marginal cost for faculty time in such research.

[25] Using the total federal granting council sponsored research figures for 1995-96 through 1997-98, this amount would now be $90.4 million.

[26] The 117%TDC is assumed to be made up of the CAUBO recommended rate of 50%TDC (general indirect costs) + 29%TDC (to reflect capital costs) + 38%TDC (marginal faculty time costs).

cover both basic and applied research and should encompass research in both the public and private sectors."

The issue of indirect costs was discussed at the meetings of the House of Commons Standing Committee on Industry. In its report the Committee recommended (#8) *"that the federal government urgently consult with the universities and research councils about fully reimbursing the indirect costs of federally funded research grants, and seek accords with the provinces to maintain the provincial share of the university research funding if the federal government assumes responsibility through the research councils for indirect costs."*[27]

In May, 1999 the Expert Panel on the Commercialization of University Research submitted its report to the Prime Minister's Advisory Council on Science and Technology: *Public Investments in University Research: Reaping the Benefits.*

The Panel noted:

"...In Canada, the federal Granting Councils and NCEs pay only the direct costs of research. In the vast majority of cases, indirect costs (including the salary of the principal investigator) must be provided by Canadian universities out of their income from provincial grants, tuition fees and private donations. This situation is impeding innovation in two ways.

First, it limits the ability of Canadian universities to perform leading-edge research. Given constraints on provincial funding (which covers the indirect cost of research), universities are sometimes unable to accept federal research funding. This has become an urgent issue requiring federal-provincial resolution.

Second, it is far more difficult for researchers employed by Canadian universities to obtain their institutions' support to conduct research. In the United States, when a researcher secures a federal grant they can more easily negotiate a reduction in their teaching duties in order to pursue their research interest....

Canadian universities, on the other hand, must find the money to hire teaching replacements from within their limited operating budgets...."

[27] The Committee was given an estimate of indirect cost rate as 40% of direct costs by Dr. T. Brzustowski, President of NSERC.

In its recommendation #6, the Panel noted:

> *"Governments should increase their investment in university research. They should also resolve, on an urgent basis, situations where universities have difficulties conducting research when federal funding is provided, but when limited provincial support is available for the associated indirect costs."*

The Council of Ontario Universities commissioned PriceWaterhouseCoopers to undertake an analysis of university enrolment projections and the capacity of universities to meet the forecast demands. The 1999 COU report, "Ontario's Students Ontario's Future", notes that "the enrolment increase could range from 53,900 (Low Scenario) students to 88,900 students (High Scenario) over the next decade." The report notes that the COU cost model:

> *"assumes a decision to phase in an increase in the funding for the indirect costs of research of $150 million per year (Low Scenario) or $300 million per hear (High Scenario). These are the costs associated with overhead that are not funded through grants from the national councils. The amounts are within the range identified by the PricewaterhouseCoopers study in order to fund the indirect costs of research at the low range or the high range of competing American jurisdictions."*

In her recent report[28] Heather Munroe-Blum commented on the problem of underfunding of indirect costs of research and the impact this had on research success and the ability to attract federal granting council funding. She notes

> *"The Government of Canada and the Government of Ontario fail to fund the full costs of research required to conduct a sufficient platform of innovation-advancing basic research, and that create the world-class human and physical infrastructure necessary for international competitiveness that most other jurisdictions expressly recognize. 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. (These indirect costs do not include the recovery of salary costs of faculty for time spent on research.) All of this leads to a perverse and literally counter-productive consequence –serious financial penalties for research success in attracting government-sponsored research support."*

[28] "Growing Ontario's Innovation System: The Strategic Role of University Research", Heather Munroe-Blum with James Duderstadt and Sir Graeme Davies, December, 1999.

Munroe-Blum addresses the issue of indirect costs in Recommendation 2 of the report, i.e., "**Grow Talent and Research Competitive ness and Construct a World-Class Infrastructure**". As part of this recommendation, the report states:

> *"Create and invest further in university research and research-teaching initiatives that grow talent and university research competitiveness and that support the creation and operation of world-class infrastructure. The goal of these programs will be to immediately bridge undermining gaps in our competitiveness by developing and attracting talented people and internationally significant research and research partners.*
>
> ***A Research Performance Fund (RPF)** to the mid-point of the PricewaterhouseCoopers estimates ($225 million annually increasing as the system grows), funds to be allocated to universities on a performance-driven basis reflecting success in federal research granting council competitions and in the competitive university research programs of Ontario that do not provide for full university research cost-recovery. (P) (F)".*[29]

Munroe-Blum suggests that the recommendation would do much to address some of Ontario's competitive gaps in supporting talented faculty, including (1) lack of a mechanism to recover a portion of salaries for faculty engaged in sponsored research; (2) lack of meaningful start-up grants for new faculty; (3) lack of a stable and responsive program of fellowships and senior scientist awards; and (4) Ontario's poor position to offer competitive salaries to high quality faculty.

In its 2000 Budget, the Ontario Government announced the establishment of the **Ontario Research Performance Fund** (ORPF) to provide $30 million annually to cover overhead costs associated with Ontario-funded research. In his Budget Speech, the Minister of Finance stated:

> *"The Province of Ontario is prepared to fund the costs associated with our own research. We expect the federal government will likewise cover the indirect costs associated with their own sponsored research."*

The ORPF is expected to provide up to 40% of direct costs for research funding which currently carries no overhead provision. For programs currently offering some indirect cost support (e.g., ORDCF at 30% incremental/new direct costs), the RPF will be used to bring the contribution up to 40%.

5. Commentary

[29] (P) – Government of Ontario (F) - Federal Government.

Operating grant support and sponsored research funding

To help understand the current funding situation and pressures faced by universities it is possible to look at the changes in the total federal granting council funding (MRC+NSERC+SSHRC – (TSRG)) to Ontario and compare it with the changes in provincial university funding (provincial operating grants - POG). Table 2 and Figure 1 illustrate these changes for the period 1987-88 through 1997-98 (using actual dollar amounts). Figure 1 presents the funding data normalized to the 1987-88 level.

Table 2: Trends in Sponsored Research Grants to Ontario and Provincial Operating Grants

Year	Total Sponsored Research Grants (NSERC + MRC + SSHRC) ($000)	Provincial Operating Grants Actual ($000)
1987-88	$173,481	$1,451,592
1988-89	$191,860	$1,554,947
1989-90	$204,452	$1,676,864
1990-91	$215,391	$1,822,796
1991-92	$223,708	$1,945,074
1992-93	$233,064	$2,009,133
1993-94	$252,116	$1,875,973
1994-95	$250,355	$1,853,629
1995-96	$248,302	$1,823,143
1996-97	$239,828	$1,550,722
1997-98	$225,754	$1,548,836

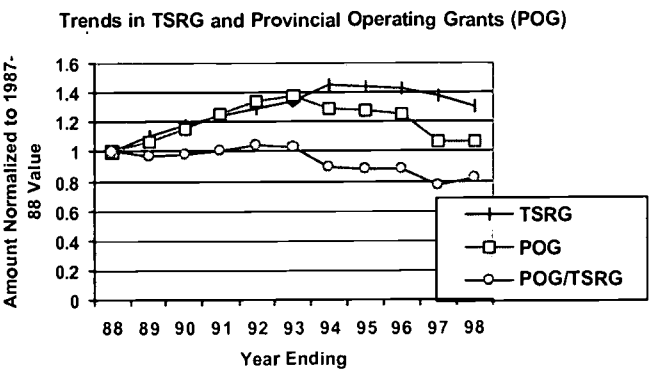

Figure 1: Trends in Total Sponsored Research (TSRG) and Provincial Operating Grants (POG) from 1987-88 to 1997-98. Data Normalized to 1987-88 Actual Value.

It can be seen that from 1987-88 to 1992-93, university revenues from the TSRG and the POG grew at approximately the same rate. From 1993-94 to 1997-98 both TSRG and POG began to shrink with the POG diminishing at a higher rate than the TSRG. For example, in 1992-93 the POG was $2,009 M and in 1997-98 it was $1,549 M, representing a drop of 23%. In contrast, the 1997-98 TSRG was only 3% lower than its 1992-93 value.[30]

[30] This is slightly misleading since the TSRG actually reached its maximum in 1993-94, while the POG was at its maximum in 1992-93. The drop in TSRG from its maximum to 1997-98 is about 10%.

Figure 1 also shows the ratio of POG to TSRG (normalized to 1987-88). If the POG (or a fixed part thereof) is used to represent the indirect costs (including faculty salaries) of sponsored research, and TSRG represents the direct costs, the ratio POG/TSRG represents the indirect to direct cost ratio. Figure 1 shows a fairly constant ratio from 1987-88 to 1992-93; the drop from 1992-93 to 1997-98 would seem to indicate that indirect costs were not keeping pace with the direct costs being supported by the federal government.

6. Definitions of Direct and Indirect Costs

One of the difficulties of comparing research funding practices in Canada with those in other jurisdictions such as the United States, is a clear definition of what constitutes direct and indirect costs of research.

In Canada, where the bulk of federal research funding is on a grant basis, direct costs are defined to include salaries of research associates, equipment and supplies, appropriate travel and subsistence and communication of research results. Indirect costs include facilities and administration costs (F&A) as well as primary investigator (faculty member) salaries (or partial salaries), and are not eligible for support. In fact, faculty member salaries are already considered as having been "covered" by the general operating grants provided by the provinces to the universities. One of the impacts of considering primary researcher salaries as indirect costs is that there is generally no support for relief from teaching duties for faculty (except for some SSHRC programs).

In the U.S., where the bulk of federal research funding is on a contract basis, direct costs include primary investigator salaries (or partial salaries), and indirect costs are restricted to F&A costs.
The American definition of Modified Total Direct Costs for research projects (and the basis for eligible F&A support) cannot be applied to the Canadian situation because of the difference in the definition of direct costs between the two jurisdictions.

A complicating factor in the analysis of indirect costs in Canadian universities is the division of financial responsibilities for research costs between the federal and provincial governments.
Currently, the Canadian government through the granting councils supports direct costs (except for primary researcher salaries), and assume that indirect costs are covered by provincial operating grants which they support through their transfer payments[31]. Provincial governments provide support to primary researcher salaries and all F&A costs through the general operating grants to universities and through mechanisms like the ROIE. Inadequacies in support must be compensated by the universities through other means of revenue generation.

[31] There has been substantial erosion of transfer payments to Ontario for post-secondary education, health and social programs, i.e., a reduction of $2.8 billion between 1995-96 and 1998-99. CHST transfers were increased by $1.1 billion in 1999-2000, with $945 million earmarked for health care and the Federal Budget 2000 makes further commitments to increase the CHST to support healthcare and post-secondary education.

In its announcement of the 21st Century Research Chairs program, the Canadian Government stated its intention of compensating more of the full costs of doing research, i.e., support of indirect costs for the Chairs program.

In its recent (2000) Budget, the Ontario Government announced its intention of providing $30 million annually in indirect cost support for Ontario-sponsored research[32] and challenged the federal government to do the same.

The U.S. government through agencies such as the NSF and NIH supports direct costs (including primary researcher salaries) and a significant portion of F&A costs. Universities need to find additional funding through support from state and local governments, the private sector, tuition, philanthropy, etc. In the Canadian context, any change in the distribution of cost responsibilities will require extensive federal/provincial negotiations.

Another complication is the recent creation of programs for research support and their individual approaches to the support of indirect costs. These programs are generally matching programs requiring additional support from other governments, the institutions themselves and the private sector.

The CFI, which is expected to inject almost two billion dollars into institutional research infrastructure over the next five years, supports capital expenditures and has no provision for indirect costs. CFI support to any infrastructure project is limited to 40% of the costs and relies on the institution to provide the other 60% from provincial matching programs, the private sector and other sources available to the institution (endowments, etc). Even if the American MTDC model were applied to these grants, in which capital expenditures are excluded, the ineligibility of operating costs for CFI grants, would result in no indirect cost support.[33]

The Ontario Research and Development Challenge Fund (ORDCF) provides approximately 33% of the total costs of a research proposal –including salaries, equipment and other operating costs. Private sector participation is mandatory, and expected to contribute a minimum of 33% towards to proposal cost with the remainder to come from the institution or other sources. The ORDCF recognizes the importance of indirect costs to the success of a research proposal and allows up to 30% of all total direct costs provided they are new, incremental costs to the institution. In this case the salaries (partial salaries) of primary investigators are eligible direct costs; however, only salaries (partial salaries) of new faculty can be used in the calculation of allowable indirect cost contributions. With the creation of the ORPF, it is expected that the ORDCF indirect cost rate will be increased to 40%.

As indicated previously, the Ontario Innovation Trust and the Premier's Research Excellence Awards currently do not support indirect costs. Following the creation of the ORPF, it is expected that PREA awards will be eligible to receive indirect cost support.

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[32] Through programs like ORDCF, PREA and ministry-funded research.

[33] Although it may be argued that some of the costs eligible for CFI support are often identified as "indirect".

7. Applying an MTDC Model to Federally Sponsored Research

Given that sponsored research results in incremental overhead/indirect costs, an obvious solution to provide indirect cost support is for the federal granting councils to allow for an eligible indirect cost component in their grants. The amount can be based on total (eligible) direct costs (TDC), payroll costs (as is done in federal government contracts) or on a Canadian version of modified total direct costs (MTDC).

Assuming that principal investigator salaries remain ineligible as a direct cost, and an indirect cost rate of 40%TDC, then based on the 1997-98 data, the dollar value of the indirect cost component for Ontario would be about **$90,302,000** (based on TSRG).[34] This indirect cost component could be calculated on an "envelope" basis and distributed to the provinces or institutions for distribution.

Assuming that principal investigator salaries remain ineligible as a direct cost, and if the MTDC were based, in principle, on the American model (i.e., exclusion of capital expenditures), the dollar amount of eligible indirect costs would vary with each grant. This would make it almost impossible to define an "envelope" approach, i.e., a bulk grant to each province, or to individual institutions.

Table 3 outlines potential overhead/indirect cost compensation (budget impact) based on a 50%MTDC rate – with capital excluded.[35] Data based on the 1997-98 TSRG grants are shown.
In light of the earlier CAUBO study the calculations could also be augmented by a further 29% reflecting the indirect costs of capital associated with research.

The data in Table 3 assumes that principal investigator salaries are ineligible as direct costs and therefore not taken into account in indirect cost calculations. If these salaries are allowed as eligible costs, the budget pressure on the councils increases accordingly – or in the absence of "new money" the amount of grant dollars for current direct costs decreases.

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[34] The total amount of sponsored research grants to Canadian institutions in 1997-98 was $607 million. A 40% overhead allowance would bring this to $850 M.

[35] Although the level of indirect costs would vary with each grant, the overall impact is calculated using an "average" capital component.

Table 3: Indirect Costs (@50% MTDC) for Total Sponsored Research Grants (TSRG) (MRC+NSERC+SSHRC)

(All costs in $000)

Base – 1997/98 TSRG	Average % Capital Component of Grants	Eligible Indirect Cost (@50% MTDC)
225,754	0	112,877
225,754	10	101,589
225,754	20	90,302
225,754	30	79,014
225,754	40	67,226
225,754	50	56,439
225,754	60	45,151
225,754	70	33,863
225,754	80	22,575
225,754	90	11,288
225,754	100	0

8. Provincial Support for Indirect Costs of Sponsored Research

Another solution would be for the province to provide "full" support for the incremental overhead costs of sponsored research through either an increase in the provincial operating grant or through an "envelope" approach such as a modified ROIE mechanism[36] or the Research Performance Fund (RPF) recommended in the Munroe-Blum report.

Provincial support is likely best given on an "envelope" basis which, in turn, argues for an indirect cost rate based on Total Direct Costs (TDC).[37] At an indirect cost rate of 40%TDC on federal sponsored research grants, the value of increased provincial support to general indirect costs would be about $90M (based on TRSG). Incremental indirect cost contributions related to faculty time can also be estimated. Table 5 estimates potential provincial contributions to indirect costs. Again, one might also want to include an estimate for capital replacement.

[36] This paper does not endorse the current ROIE mechanism and its distribution formula as the desired mechanism for distribution of indirect or infrastructure costs. It is, nonetheless, an example of an "envelope" mechanism.

[37] Excluding faculty time.

Table 5: Potential Provincial Contributions to Indirect Costs of Research

	Rate	Indirect Cost Contribution TSRG
General Indirect Costs	40% TDC	$90.3 M
Faculty Time	38% TDC	$85.8 M
Total Potential Contribution to Indirect Costs[38]		$176.1 M

The Assistant Vice-Provost of the University of Toronto, Martin England, has estimated that research funding to Ontario from federal sources – including the granting councils, the NCE, the CFI and others will be approximately $500M per year over the next three years. He also forecast provincial sources to contribute another $230M (average) from 1999-2000 to 2001-02.[39] In all likelihood the numbers will be even greater with the announced increases in CFI and OIT funding.

England estimated that about $500M of this total support would not bring an overhead contribution (especially the federal money), and suggested that, based on the Bovey report's recommendations of a 50%TDC rate, there is a need for a $250M infrastructure fund. Adding the 38%TDC to cover faculty time, he suggested that the total fund would need to be about $440M per year. These calculations presuppose that an indirect cost rate of 88%TDC is applicable to all research dollars flowing into the province.

In its 2000 Budget,[40] the Ontario Government agreed to support indirect costs for university research associated with current provincial research funding investments. The Ontario Research Performance Fund will provide up to $30 million per year to bring overhead support rates to 40% for such programs as the ORDCF, PREA and Ministry-funded research agreements (e.g., Agriculture, Food and Rural Affairs, and the Ministry of Health). In the budget speech, it was clear that Ontario considers indirect cost support to be a shared responsibility (and therefore does not intend to provide full indirect cost support for all

[38] Does not include overhead requirements anticipated from federal programs other than the granting councils (e.g., NCE) or other provincial programs which do not bring overhead.

[39] This value is low since the estimates were made before the initial announcement of the Ontario Innovation Trust.

[40] It should be noted that the initial draft of this paper was circulated in January, 2000 well before the 2000 Ontario Budget announcement.

sponsored research), and challenged the federal government to provide indirect cost support for its sponsored research.

9. Summary and Conclusions

University research has continued to evolve towards science based 'resource intensive' research. The Bovey Commission recognized this reality in 1984; fifteen years later universities are struggling with the need for acquiring and maintaining sophisticated equipment and physical facilities and developing a level of technical infrastructure support to facilitate research. We are also seeing increased use of technology in the humanities and social sciences that is adding new costs to research (e.g., databases, search engines, analytical tools) – another perspective on the use of the term "resource intensive".

The ROIE established in 1987 is insufficient, and does not reflect "standard" indirect cost rates (e.g., 40%TDC, 50%MTDC). Furthermore, the distribution of ROIE to individual institutions is based on selected research grants.[41] Much of Ontario Government support for university research already contains an indirect cost component (ORDCF, Ministry-funded research). Although the new Ontario Research Performance Fund will enhance that support, it cannot alleviate the full indirect cost pressure associated with growing research sponsorship (for both operation and infrastructure) at Ontario universities.

Although one might argue that there is support for indirect costs of research funded by the federal granting council 'buried' inside the provincial operating grants to individual institutions, the fact is provincial operating grants have simply not kept pace with the increase in research funding. When coupled with the announced and anticipated increases in direct research funding from the granting councils, CFI, ORDCF and OIT, as well as other research support programs, it is clear there will be significant additional pressure placed on basic university operating funds.

Direct funding for research outpacing the changes in the level of provincial support and the continued emphasis on 'resource intensive' research-are the two key factors that have led to a serious problem in the support of resource intensive research in Ontario universities. The need to provide resources to address the research infrastructure and services requirement is pressing and is occurring at a time when large-scale faculty renewal is being planned –with a strong competition for the best faculty. It is also occurring at a time when universities are being asked to meet the challenge of a major increase in student demand – a situation that will only place added significant financial pressure on institutions.

[41] In view of the implementation of new support programs, including provincial programs, it would be advantageous to revisit the criteria used to select grants to be used for the allocation of the ROIE.

Appendix 1 Comparison of Overhead Rates

University	Overhead Rates	Overhead Distribution
Brock	Minimum rate based on federal government Department of Supplies and Services (DSS) guidelines for federal contracts.[42] May try to negotiate as high as 100%, but not less than 30% of direct payroll costs No overhead on contracts < $5000	30% Central Admin 30% Faculty/Dean 30% Department 10% Research Office
Carleton	Minimum DSS rates 40% Total Direct Costs (TDC) (TDC not defined specifically in policy; assume it includes salaries and benefits, equipment, materials and supplies, travel, etc.)	40% University 45% Faculty/Dean 15% VP Research
Lakehead	For research "Grants" minimum 10%, where agency allows. For research Contracts minimum 20% (assume TDC/not defined) DSS rates apply for federal contracts CIDA rates apply for CIDA contracts[43]	30% Central 20% Research Office 10% Library 20% School/Faculty 20% PI
Laurentian	Rate based on DSS guidelines, i.e., 65% of payroll; reduced to 30% if the contract benefits students. New policy may ask for 30% of total costs (TDC) – although these are not currently defined	50% University 50% Unit (Dean) 65% University Research Centre 35% University
McMaster	Contracts: 40% TDC + 2% Travel TDC includes cost of faculty time devoted to contract based on standard per diem rate (annual salary/225) + proportional benefits; 50% of the individual graduate student's cost to the project; PDF, visitor and subcontractor salary costs; equipment, materials and supplies. Private Sector "Grants": 12%[44]	50% University 50% Faculty/Dean

[42] Department of Supplies and Services (DSS) – now known as Public Works and Government Services Canada (PWGSC) guidelines: 65% payroll (i.e., total salaries and benefits (S+B) for on-campus work); 30% payroll for off-campus work; 2% travel and subsistence.

[43] CIDA rates are generally 54% payroll for work in Canada and 35% payroll for work outside of Canada.

University	Overhead Rates	Overhead Distribution
Nipissing	There is no general university policy on indirect costs.	
Queen's	Non-government "Grants" 15% TDC (includes equipment and supplies) + other costs allowed by sponsor. Contracts: minimum 40% TDC (on-campus); 20% off-campus. Ontario[45]: 30% payroll (on campus with 15% off-campus) + 30% on materials and supplies and 2% travel Federal (under review) – prefer 40% TDC; DSS rates may apply CIDA – 54% S+B for work performed in Canada, and 35% for work performed outside of Canada.	33% University 67% Department or Academic Unit For hospital research 25% Hospital 25% University 50% Department
Ryerson	Grants-in-aid (without conditions): 0% Grants-in-aid (with conditions): 10-40% total direct costs (TDC) Contribution Agreements: 10-40% TDC Federal (PWGSC Contracts: DSS Guidelines Other Federal contracts 25-40% TDC + 2% travel Ontario 25-40% TDC Industry (on-campus) 40% TDC Industry (off-campus) 25% TDC	General: 45% University 20% Faculty/Dean 20% Department 15% Faculty member (PI) For faculty based centres 45% University 30% Faculty/Dean 25% Centre For university centres 45% University 30% Associate VP Academic 25% Centre
Trent	Minimum Rate corresponds to DSS Guidelines Although the university should try for 100% (payroll), the rate will not	25% Graduate Studies 5% Univ. Research Ctee For contracts at DSS rate

[44] Is the same rate applied by the Provincial government to the total amount of federal council grants awarded to the University to determine the amount received through the Research Envelope.

[45] Rates for Ontario programs generally reflect those given through URIF, Centres of Excellence; Ontario Research and Development Challenge Fund also offers 30% TDC (no exclusions) to cover indirect costs.

University	Overhead Rates	Overhead Distribution
	be less than 20% direct payroll costs. Payroll costs should reflect the per diem rate and the time spent on the contract, i.e., annual salary/225 + 15% benefits for a maximum of 70 days.	(or higher) 30% to research unit and 40% to the university. At rate of 20% payroll, the university's share is 50% (and 20% to the researcher). Sliding scale in between.
Guelph	Industry sponsors: 35% TDC (TDC not defined) Federal Government (DSS Guidelines) Graduate Student rate: 35% total payroll (on campus) 15% payroll (off campus) OMAFRA – 33.5% TDC Ontario Centres of Excellence: 30% TDC International Development Research Centre: 13% staff costs and supplies Alberta Agricultural Research Institute: 15% (on-campus), 7.5% (off-campus) Overhead less than the standard rate may be approved if the research makes a significant contribution to the university's academic programs and the conditions are similar to those of a grant.	40% Department. 60% University
Ottawa	Minimum rate: DSS Guidelines	75% Faculty/Dean 20% Central Admin 5% Research Services
Toronto	Standard Rate 40% TDC (includes equipment, materials and supplies)	40% University 50% Department

[46] For equipment the rate is 30% of the first $20,000 + 10% of the next $80,000 + 5% of cost in excess of $100,000. For example, for a $250,000 instrument, the rate is $6,000 + $8,000 + $7,500 = $21,500.

University	Overhead Rates	Overhead Distribution
Toronto (cont.)	Federal Government - DSS Guidelines CIDA: 54% payroll (work in Canada) International Development Research Centre: 13% TDC Ontario/COE: 30% TDC except for equipment[46] Other Ontario Programs: 30% TDC US Federal Government 44.3% TDC Industrial "grants" 15% TDC Foundation "grants" 10% TDC	5% Faculty 5% Accommodation and Facilities Directorate
Waterloo	Standard Rate 40% TDC (includes equipment, materials and supplies) Federal Government - DSS Guidelines – contribution agreements are a problem. CIDA: 54% payroll (work in Canada) International Development Research Centre: 13% TDC Ontario/COE: 30% TDC except for equipment[47] Other Ontario Programs: 30% TDC (contracts), or variable (grants). US Federal Government 41.2% TDC Industrial "grants" 15% TDC Foundation "grants" 10% TDC - variable	50% Central Revenue 50% Faculty
Western Ontario	40% TDC	30% Faculty/Dean 12.5% Department 12.5% Laboratory 22.5% Corporate UWO

[47] For equipment the rate is 30% of the first $20,000 + 10% of the next $80,000 + 5% of cost in excess of $100,000. For example, for a $250,000 instrument, the rate is $6,000 + $8,000 + $7,500 = $21,500.

University	Overhead Rates	Overhead Distribution
		22.5% Research Promotion Fund
Windsor	For on-campus work: 65% payroll (Faculty and Staff) paid directly from contract funds 30% payroll (Students) paid directly from contract funds For off-campus work: 30% payroll paid directly from contract funds.	50% University 30% College 20% PI
Wilfrid Laurier	Minimum rate: DSS Guidelines Where total direct costs are used, indirect costs range from 20-40% TDC	For individual contracts or those generated by University-affiliated Centres: 30% University 30% Office of Research Overhead Account 40% Home Faculty Overhead Account For contracts generated by Faculty- affiliated Centres: 30% University 20% Office of Research 50% Home Faculty
York	**Minimum** Rate: DSS Guidelines: Rate may be based on TDC	45% central reserves 10% Office of Research Administration 45% Faculty If rate based on TDC, 65% University 25% Faculty 10% Off. Res. Admin.
COMPARISON TO UNIVERSITIES IN OTHER PROVINCES		
Alberta	U of A estimates total indirect costs are about 45% of direct costs	40% University 38% Faculty

University	Overhead Rates	Overhead Distribution
	Research grants – 15% TDC (7.5% off-campus) Research contracts – 40% TDC (20% off-campus) For small Alberta start-up companies – 15% TDC (7.5% off campus) Federal government – DSS Rates US government – 50.3% (S+B) (except for NIH grants)	13% Library 9% Res. Init. Fund
British Columbia	Federal government – DSS Rates Industry Research Contracts – 35% TDC –excluding equipment, non-university consultants, and travel.	Distribution not defined.
Manitoba	Fed. Government – DSS Rates IRDC – 13% TDC CIDA – 54% payroll (on-campus), 35% payroll (off-campus) Province – 30% payroll for research and academic service agreements Industry – 30% TDC	Distribution not defined.
McGill	40% TDC for contracts (TDC not defined) 15% TDC for grants	67% University 33% Faculty
Dalhousie	Federal Government contracts – DSS Rates US Government 43.2% S+B Other contracts – 30% TDC	100% Faculty (normally split 50/50 with Department
COMPARISON – US UNIVERSITIES		
Michigan State	Research – 47.5% [48]MTDC (Modified Total Direct Costs which exclude equipment and subcontracts > $25K Other sponsored projects – 38% MTDC	33% Department 33% - Physical Plant 15% - General Univ. 11% - Building/Equip 6% - Research Admin

[48] Rate negotiated with federal government

University	Overhead Rates	Overhead Distribution
	Off-campus – 26% MTDC	2% Library
MIT	Facilities and Administrative (F&A) Rates = indirect costs 63.5% MTDC –on campus 8.5% MTDC – off campus	Distribution not defined
SUNY (State University of New York at Buffalo)	For Federally sponsored programs (administered through SUNY's Research Foundation (RF) – 54% MTDC (on campus) and 26.0 % off-campus. For non-federal programs (NYS, foreign governments) through RF – 49.9% TDC. (on campus) and 22.7% off-campus Private, local government, foreign NGO's are administered through the University at Buffalo Foundation Services (UBFS) and are subject to F&A Rate of 39.9% + 10% UBFS Fee (for on-campus work)	Distribution not defined
Harvard	Federal sponsors: F&A Rate – 64% MTDC (on-campus) 26% (off-campus) Other sponsors (foundations, health organizations) range from 0-15% MTDC	Distribution not defined
Berkeley	Federal sponsors: F&A Rate – 50.4% MTDC (on-campus) and 26% MTDC for off-campus work.	Distribution not defined
Northwestern University Caltech	Federally sponsored programs – 48% MTDC (on-campus) and 26.0% off-campus Non-federal projects 53.7% MTDC (on-campus) and 26% (off-campus) 56% MTDC (on-campus) and 24.5% (off-campus)	Not defined Not defined
Ohio State	For all projects – Minimum Administrative Overhead – 5.8% Project rates 46% MTDC (on-campus) and 26% (off-campus)	56.5% Administration 29.2% Operations and Maintenance 3.2% Library 3.2% Building use allowance 0.2% Improvement use 7.6% Equipment use

University	Overhead Rates	Overhead Distribution
		allowance
Utah State	On-campus rates – 39% MTDC (includes materials and supplies but excludes equipment and capital expenditures) Off-campus – 22% MTDC	Not defined

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