

OFFICE OF RESEARCH

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University of

Washington

**A Primer
on Indirect Costs**

March 1992

“Direct costs are those costs that can be identified specifically with a particular sponsored project . . . relatively easily with a high degree of accuracy.”

“Indirect costs are those that are incurred for common or joint objectives, and therefore cannot be identified readily and specifically with a particular sponsored project and instructional activity or any other institutional activity.”

A Primer on Indirect Costs at the University of Washington

Abstract

This Primer is designed to provide background information on indirect costs to members of the University of Washington community. It begins with a brief history of indirect cost funding, then describes how indirect cost rates are calculated, defines the various cost components used to calculate an institutional rate, and explains how indirect cost recovery provides significant funding for the infrastructure and administrative activities necessary to carry out the University's research programs.

1. What is the origin of the indirect cost concept?

Federally funded research is a prominent feature at all major American research universities today. Prior to World War II, however, federal support for research as we know it was virtually nonexistent. The situation changed dramatically during the war as the federal government, initially through the Office of Scientific Research and Development, invested heavily in the discovery and development of new technological tools to support the war effort. Successes achieved by the scientific, medical and engineering communities at American universities created a new awareness of the potential of university-based science and technology.

During and after the war, the Office of Naval Research (ONR) engaged faculty members at universities to carry out contract research for special projects. By 1947, ONR began to formalize such funding programs. In the process, the issue of institutional costs (later designated indirect costs) was addressed. It became apparent that a successful university-based research infrastructure could expand and improve only if the costs incurred in connection with these Navy contracts—beyond the obvious direct costs of research—were reimbursed. ONR formally acknowledged the legitimacy of establishing differential indirect cost

elements. They recognized that when reimbursing an institution for a given project, one had to take into account whether many or only a few capital facilities would be required, whether substantial or token utility costs would be incurred, and so forth. Despite ONR's formal acknowledgement of these indirect cost principles, the practice in the early years was to provide a flat rate reimbursement for indirect costs. Nevertheless, discussions of this issue continued between the universities and the federal government. In 1958, a formal and extensive set of guidelines for determining indirect costs was issued as Bureau of the Budget *Circular A-21*. Costs had to be justified according to a set of formal criteria, methods had to be developed for distributing the costs between instruction and research, adequate documentation had to be provided, and certain costs were declared unallowable.

Prior to 1958 the Department of Health, Education and Welfare (DHEW) had also acknowledged the ONR philosophy on indirect costs, but restricted recovery of indirect costs by setting an upper limit of 8%. Today this is still the mandatory rate for most National Institutes of Health (NIH) training grants. In 1958, the general rate for NIH was fixed by law at 15%, then raised to 20% in 1963. In 1966, the government removed the indirect cost ceiling and announced that, henceforth, federal policy would be to reimburse universities fully for the indirect costs incurred in conducting funded research projects. At the same time, mandatory

cost-sharing language was instituted in the DHEW Appropriations Act, requiring that federally funded grants be augmented with support from the University. At many institutions, including the

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University of Washington, this requirement has been satisfied by showing that a portion of faculty time is devoted to the grant but not reimbursed by federal sources. The guidelines in *Circular A-21* provided a mechanism for universities to receive reimbursement for their costs, but the guidelines also imposed new compliance standards, requiring detailed documentation.

2. Have the terms of *Circular A-21* remained fixed?

Circular A-21 was revised six times between 1961 and 1976. In 1979, protracted negotiations among OMB (Office of Management and Budget, formerly the Bureau of the Budget), Federal agencies and universities led to a major revision of *Circular A-21*. The government had been dissatisfied with the lack of uniformity in costing methods and documentation of salary charges. The universities hoped to get a clearer definition of allowable costs to protect themselves from unreasonable interpretation of the guidelines by government officials and the threat of future audit disallowances. The 1979 revision increased reporting requirements and reduced institutional flexibility. It also introduced the concept of Modified Total Direct Costs (MTDC) as the standard basis for determining allowable indirect costs (see Section 4 below).

Although revisions to OMB *Circular A-21* were negotiated between government cost accounting experts and university counterparts from the mid-1960s and through the 1970s, the Administration budget requests during the 1980s attempted to use regulatory language to modify cost principles. In 1983 the Department of Health and Human Services (DHHS, the new name for DHEW after the Department of Education had been established separately) proposed a ceiling for indirect costs. In 1985 DHHS requested that indirect cost rates be frozen at their 1985 levels. In 1986 the Assistant Secretary for Management and Budget at OMB and the Deputy Associate Director for Health Programs at DHHS teamed up to propose a limit of 20% for recovery of administrative costs. While

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none of these attempts were allowed by Congress, the December 1986 revision of *Circular A-21* did set a 3.6% fixed allowance for faculty administrative costs, establishing a precedent for capping a component of the indirect cost rate.

Increasing budget pressure, demands from the research community for increased funding, recent revelation of cost-accounting errors, and the recognition that the federal guidelines are ambiguous have breathed new life into earlier efforts to limit indirect costs and have resulted in increased federal scrutiny of indirect costs at universities. This led in 1991 to new restrictions and recent revisions of *Circular A-21*, including a 26% cap on administrative cost components (General Administra-

tion, Departmental Administration, and Sponsored Projects (Grants and Contracts) Administration).

3. What is the distinction between direct and indirect costs?

Circular A-21 states that, "direct costs are those costs that can be identified specifically with a particular sponsored project . . . relatively easily with a high degree of accuracy." By contrast, "indirect costs are those that are incurred for common or joint objectives, and therefore cannot be identified readily and specifically with a particular sponsored project and instructional activity or any other institutional activity." Indirect costs are those involving resources used mutually by different individuals and groups, making it difficult to assess precisely which users should pay what share. Direct costs are easily assigned to a specific research project and paid by its direct grant funding.

In some cases it is easy to make this distinction. For example, if an investigator has to buy a chemical for a specific experiment, then that clearly

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is a direct cost to the grant. On the other hand, an investigator's use of electrical power, water and other utilities, or the services of the purchasing and accounting offices, are not normally charged directly. Installing individual meters to monitor

usage levels of electricity and carrying out the accounting and billing functions would probably cost as much as the electricity itself.

Attributing an appropriate indirect cost amount for the use of space can be even more difficult. If, as is typical, a building houses dozens of investigators who are involved individually and collectively in teaching, research, public service and other functions, determining the building costs that should be attributed to a particular faculty member's research project is not practical. In addition, each faculty member may have several grants, which may use common space differentially. Although one could imagine a means of attributing a cost for the repair of a section of the roof (which may last 20 to 30 years) to a specific grant, it has generally been agreed that using a more macroscopic and statistically averaged method is much more sensible and cost effective. That has been the accepted practice for over three decades.

4. How is the overall indirect cost rate calculated?

A formalized process approved by the Federal government in *Circular A-21* (and consistent with generally accepted accounting principles) is used to determine the University's indirect cost rate for sponsored research. First, all indirect costs within the institution are assigned to one of seven cost categories based on their primary function. *Circular A-21* defines the seven cost categories (cost pools, see Section 5). Then a fractional amount from each pool is attributed to the research enterprise according to standard accounting practice. Adding these fractional amounts yields the institution's total indirect costs (TIDC) attributable to sponsored research.

This raw total is converted to a rate by dividing it by a quantity called "Modified Total Direct Costs" (MTDC). In 1979, the federal government decided to adopt a "modified total direct costs" approach for calculating indirect costs of individual grants as

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well as the overall indirect cost rate. MTDC at the UW is calculated as total direct cost minus the cost of equipment, renovation, patient care, off-campus building rental, training stipends, and subcontracts. At most universities, only subcontracts over \$25,000 are excluded. (The UW elected to exclude all subcontracts because of ongoing audit issues associated with the \$25,000 threshold.) For most individual research projects, MTDC represents the direct costs less any equipment costs. See Chart I, "The Indirect Cost Formula."

One other component has been involved in the past. A carry-forward percentage was added (or subtracted) to compensate for the difference between the projected (i.e., charged) rate (based on the previous year's costs) and the actual after-the-

fact audited rate during the years the grant was active. The carry-forward adjustment was intended to correct approximately the deviation between projected (charged) costs and actual costs, usually by adding a percentage point or two to the rate for the following year. It appears that the 1991 revision of *Circular A-21* will do away with the carry-forward adjustment in future negotiations.

5. How are the indirect cost components calculated?

Circular A-21 spells out in considerable detail the data that must be provided in calculating the indi-

Chart I	
The Indirect Cost Rate Formula	
Proposed Indirect Cost Rate =	$\frac{(TIDC)}{(MTDC)} + (CF\%)$
Indirect Cost Definitions	
MTDC (Modified Total Direct Costs)	= (Salaries and Wages) plus (All Other Direct Costs) minus (Equipment, renovation costs, patient care, sub-contracts, off-campus building rental costs and stipends)
TIDC	= Total of all indirect costs for sponsored research based on summation of the seven federally approved indirect cost pools.
CF% (Carry-Forward Percentage)	= The percentage subtracted or added to compensate for the previous year's deviation from actual costs (basing the current rate on a previous year's data).

rect cost rate. There are seven major categories (so-called indirect cost pools) that make up the calculation of an institution's total indirect costs. These seven pools and an eighth component, the carry-forward adjustment, are shown in Chart II. The chart suggests that for each \$100,000 allowed for MTDC, the 1991 UW rate generates an additional \$2,700 for the Buildings and Improvements Use Allowance (Pool IA), \$6,200 for the Equipment Use Allowance (Pool IB), and so on.

Cost Pool IA provides for costs related to buildings. This cost pool contains four types of costs. The first and largest segment of the building cost pool is the building use allowance. Use allowance is essentially equivalent to a straight line depreciation schedule for a building life of 50 years. In other words, the institution is allowed to include an amount equal to 2 percent per year of the original building acquisition cost (less federal funding) in the building cost pool. Based on an extensive "space study" carried out by the University, an estimate is made of the fraction of building use which can be attributed to the research effort. The building cost pool also allows for the cost of land

improvements (such as sidewalks, exterior lighting, landscaping), the cost of off-campus rental space (if not charged to a grant directly) and the cost of debt service for building construction to the extent these costs are research related.

Cost Pool IB is for equipment depreciation. An annual depreciation amount is computed for every piece of University equipment not purchased with federal funds. The depreciation amount is based on "useful life" periods established by the State of Washington. Depreciation amounts attributable to research are based on the University's space study. Depreciation for equipment in a room identified as research space is considered an indirect cost of the research carried out in that room.

Cost Pool II includes physical plant operations and maintenance expenses. This category covers the cost of utilities, maintenance, custodial services, environmental health and safety, transportation services, campus security and building design. Several distribution methodologies are used to apportion these costs to research and other activities.

Chart II
University of Washington Indirect Cost Components
and their Percentage of Modified Total Direct Costs

Rate Component	%
I. Use Allowance	
A. Buildings & Improvements	2.7
B. Equipment	6.2
II. Physical Plant Operations & Maintenance	11.3
III. General Administration	11.0
IV. Department Administration	14.0
V. Sponsored Projects Administration	2.1
VI. Library	2.0
VII. Graduate Student Services	.4
PLUS Carry-Forward Adjustment	3.3
On-Campus Research Rate for UW (FY '91)	53.0%

Cost Pool III includes general and administrative expenses. This category encompasses personnel, payroll and purchasing services, financial management and accounting, as well as a variety of other central administrative functions. In addition, expenses in the offices of the President, the Provost, and the Executive Vice President are included in this cost pool in proportion to the research activities supported. Most of the recent discussions at the national level about inappropriate indirect cost charges involve Cost Pool III. This will be discussed further in Section 7.

Cost Pool IV addresses departmental administration, but the title for this cost pool does not adequately identify the activities it supports. Organizationally, this cost pool includes expenses at both the college and department levels, and functionally, this cost pool includes both program and technical support and administrative expenses. Typical expenditures include personnel costs in the dean's office as well as a portion of departmental salaries for the chair and selected faculty (see Section 20), administrative support staff, secretaries, and technical support staff in the department. In addition, supplies, travel, and other operational costs are included. Departmental administration expenditures are distributed to research and other University activities in proportion to the research activities supported.

Cost Pool V includes the cost for sponsored projects administration. Sponsored projects are those for which a separate budget has been established to support the research or training effort regardless of the funding source. The primary elements in this pool are the costs associated with the offices of Grant and Contract Accounting, Grant and Contract Services, and some costs in the office of the Vice Provost for Research.

Cost Pool VI covers library costs. This pool is based on the cost of operating the University's library system, including administration, book acquisitions, and the costs of periodicals. Small departmental libraries operated by academic departments are not included in the cost pool.

Detailed accounting is required to establish what fraction of the total cost of the library enterprise is legitimately attributed to the research activities of the University, as distinct from the instructional activities supported by the Library.

The last category, **Cost Pool VII**, provides for student services. This includes a portion of the costs of the Graduate Admissions office, graduate student counseling, health services, and similar activities. Much sponsored research is conducted by graduate students. Therefore a proportion of the expense for administering their programs is allowed in the indirect cost formula.

Once all of these costs are identified and calculated for a given year, the sum becomes the numerator in the indirect cost rate calculation shown in Chart I. The modified total direct costs (MTDC) for that year are placed in the denominator. These calculations are always carried out using audited data from the previous year's activities. The resulting quotient is the proposed indirect cost rate before the carry-forward percentage is added.

6. What is the administrative process for negotiating the final indirect cost rate?

Once the indirect cost information is assembled and appropriately documented, it is submitted to the cognizant agency, which for the University of Washington is the Department of Health and Human Services. DHHS negotiators make their own evaluation of the materials submitted and may seek to negotiate (downward) some of the costs included in the pools. A carry-forward adjustment may also be made at this stage.

For the FY 1991 negotiations, University documentation justified a rate of 56% (before any carry-forward adjustment) for on-campus research. After negotiations with DHHS, the University acceded to a final base rate of 49.7%. More specifically, the final negotiated result for the FY 1991 rate was 49.7% for the base rate, plus a 3.3% carry-forward.

for a total of 53% for the overall rate fixed for a three-year period (FY 1991-93). This is the on-campus research rate, the maximum rate which the University is permitted to charge federal grants and contracts. Other (lower) rates are established for off-campus research, where some of the underlying costs such as space rental are charged directly to the grant and not borne by the University. As has already been noted, the federal government imposes selective restrictions on the indirect costs attributed to certain grants, such as the 8% rate on many training grants. The component rate for each of the seven pools and the carry-forward percentage can also be calculated separately, and that is shown in Chart II.

7. What is not allowable in cost pools according to revised *Circular A-21*?

Much of the recent public discussion of indirect costs has focused on Administrative costs in **Cost Pool III**, in part because the guidelines in *Circular A-21* were often ambiguous with respect to expenditures allowed in this category. Whereas a number of administrative expenditures had been allowed before the intense scrutiny in 1991, new standards were later applied retroactively.

In this new climate, it was no longer a question of whether an expenditure had been allowed by *Circular A-21*, but whether it was considered reasonable by "today's" standards. In the turbulent atmosphere generated by congressional investigations, previous "unallowables" were interpreted or made more explicit and new ones were added to the list. Many universities had always acted conservatively and had routinely excluded borderline costs. Nevertheless, the refined lists, applied retroactively, seemed designed in part to make institutions appear to have been in violation of *Circular A-21*. This murky area has been the main source of most of the recent controversy. The new and improved list of "unallowables" are sketched below for ready reference.

Representative Unallowables

- Alcoholic beverages
- Alumni activities
- Institution-furnished automobiles for personal use
- Legal costs of criminal and civil proceedings, appeals and patent infringements
- Donations and contributions made by an institution
- Fund raising activities
- Entertainment
- Executive and legislative lobbying
- Insurance against defects
- Fines and penalties
- Goods and services for the personal use of employees
- Housing and personal living expenses of an institution's officers
- Memberships in any civic, community or social organization or country club
- Selling or marketing of goods or services
- Trustees' travel

Under the recently revised *Circular A-21*, none of these "unallowables" can be attributed to the indirect cost pools. Indeed, the revised *Circular A-21* requires universities to certify that no "unallowables" are in the indirect cost pools. An example of a typical problem might be instructive. Although the UW rigorously excluded all costs associated with fund raising that were incurred by the central administration, similar costs in departments, schools and colleges were sometimes labeled as "miscellaneous," and a fraction of such costs were innocently included in the Departmental Administration cost pool. When recent audits were carried out and the invoices of these miscellaneous expenditures were examined, it was discovered that in some cases, some of the costs (**Cost Pool IV**) were associated with development (fund raising) activities. These costs were inadvertently

included in the cost pool. Similarly, the UW systematically excluded normal costs associated with the President's residence from the cost pool even though *Circular A-21* made provision for such costs, if properly pro-rated (since some portion of a President's efforts support the graduate teaching and research programs). However, small portions of an unrestricted private fund were used for routine refurbishment of the residence, and expenditures from this particular fund were also inadvertently and regrettably included in the cost pool. Minor adjustments in our accounting practices should prevent most such errors in the future. In any event, these minor accounting errors may have been rendered moot as a result of the downward negotiations (from 56% requested to 49.7% granted) discussed earlier.

8. What are the typical elements of a research grant?

Chart III outlines the budget for a typical research project in the sciences. Salaries and benefits often constitute 50% or more of the project budget. The supplies and services component, including maintenance contracts, repairs and normal operating costs, is often only about 10% of the total. These budgeted items are then added together to determine the Modified Total Direct Costs of the grant, a sum which forms the basis for calculating the grant's indirect costs (the project's MTDC x the institution's overhead rate for that year). The indirect costs and the MTDC together typically com-

Chart III
Typical Research Grant Subtotals

Summer Salary (1 month)	\$ 6,000
Post-Doctoral Research Associate	24,000
Subtotal: Salaries for Senior Personnel	\$30,000
Benefits (21%)	6,300
Graduate Student Research Associate	13,700
(11 months; includes tuition & benefits)	
Subtotal: Salaries and Benefits	\$50,000
Supplies and Services	7,000
Publications	1,000
Travel	2,000
Subtotal: MTDC	\$60,000
Indirect Cost (53% of MTDC)	31,800
Subtotal: (MTDC plus IDC)	\$91,800
Equipment	8,200
TOTAL AWARD	\$100,000

Every grant is unique.
Every grant has different IDC impacts.

prise over 90% of the total award. Usually the remainder involves various items of equipment that might be needed to carry out the research but which are excluded from the MTDC calculation. Although the chart represents a typical project, the character of projects varies enormously across the institution. Some grants can be as small as \$50 and some can be as large as \$5 million, or even more. Moreover, it is clear that each grant will use different resources and therefore have a different indirect cost impact within the institution.

9. Why should my grant pay indirect costs?

It is not uncommon for faculty members to feel that when they successfully compete for a grant, the indirect cost component is something that they are bringing to the University and donating to the institution's coffers. There is also a tendency to underestimate the nature and cost of essential

From the sponsor's and the institution's point of view, the indirect cost component is distinct from the direct cost award, and in the best of circumstances it simply reimburses the institution for a portion of the real cost to the University of a specific research project.

support services. From the institution's point of view, the faculty member's proposal really addresses the direct cost elements only, and when a federal agency or other sponsor funds the research, the direct cost commitment to the faculty member must be supplemented to pay for a share of the institution's indirect costs. The reimbursement of indirect costs is a matter between the institution and the sponsor, based on the principles outlined in

Circular A-21. In fact, the University subsidizes many proposals for which the indirect cost rates are arbitrarily restricted by the agency. From the sponsor's and the institution's point of view, the indirect cost component is distinct from the direct cost award, and in the best of circumstances it simply reimburses the institution for the real cost to the University of a specific research project. The researcher may see it differently, and this can be a

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cause for misunderstanding. The faculty member feels that she or he is contributing significant indirect cost dollars to the University, whereas the administration may feel that the University is simply being reimbursed (appropriately) for the indirect costs of the project. All too frequently, the recovered indirect costs do not fully cover the actual indirect costs of such research. In many instances the cost of the space alone, if calculated at market rates, would be comparable to the indirect cost amount generated by the grant.

The situation is even more complicated than the above analysis suggests. When a federal agency receives its appropriation from Congress, there is no distinction between direct and indirect costs. The agency receives a total budget to carry out its program. Whatever funds the agency has to pay out for indirect costs are clearly unavailable to award for direct cost purposes. Thus, there is a fundamental trade-off made at the agency level between direct and indirect costs, which makes this issue of legitimate concern to faculty considering the long-term prospects for their disciplines.

Some faculty members feel that if they could force sponsors to reduce the indirect costs a university

can recover, there would be more money for their research program. That tactic might work in the short term, if the "savings" were used to help fund a larger number of grants. However, in the longer term, if the university loses revenue in this way, it will be forced to cut services, staff and faculty positions, reduce available research space, and trim other expenses, so that any initial advantage will be undermined or completely outweighed by later disadvantages. If the reduction of indirect

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costs were carried to the extreme, all indirect charges could be eliminated and the savings transferred to the direct cost category. But then a university would either have to eliminate many research-related activities and resources or charge each grant directly for space, utilities and every other service required to carry out the research activity. Such an approach would not be cost effective, as discussed earlier.

10. What are the indirect cost charges to my grant actually paying for?

Chart IV shows a variety of activities and costs which are allowable components for calculating the university's overall indirect cost rate. While central administrative expenses may be the component of indirect costs that come most readily to mind, many institutional resources are used in support of research. A given project will require

Chart IV
Representative Resources Allowed
as Indirect Costs

Accounting Office
Advertising Costs (for Personnel)
Affirmative Action Monitoring
Animal Care Reviews
Central Administration
College Administration
Communications Costs
Computer Facilities and Services
Custodial Services
Departmental Administration
Electronics Shops
Employee Benefits
Environmental Health & Safety
Facilities and Space Usage
Graduate Student Admissions
Graduate Student Services
Grant and Contract Services Office
Human Subjects Reviews
Insurance (not life)
Library Services
Machine Shops
Maintenance
Payroll Office
Personnel Office
Purchasing Office
Recreational Facilities
Risk Management
Security (Campus Police)
Selected Publications
Selected Subscriptions
Seminar Costs
Stockrooms
Taxes
Transportation Costs
University Architect
Utilities

some of the resources on the list more than others, but most projects draw on a substantial fraction of them. Moreover, a fairly small project proposal and subsequent award may require as much admin-

Chart V
Federal Regulations
Since 1988

New or revised federal regulations:

Anti-Kickback Act (1988)
Anti-Lobbying Rules (1990/92)
Certifying Accuracy of Indirect Costs (1991)
Clean Air Standards (1988/90)
Clean Water Standards (1988/90)
Debarment and Suspension (1989)
Drug and Alcohol Free Workplace (1989)
Drug Free Workforce (1989)
Drug Free Schools and Campuses Act (1990)
Hazardous Waste Disposal (1988/90)
Medical and Infectious Waste (1988/90)
Misconduct in Science (1989)
Non-delinquency of Federal Debt (1989)
NEA Clause on Obscenity (1990)
Procurement Integrity (1990)
Radioactive Waste Disposal (1988/90)
Revisions to Circular A-21 (1991)
Right to Know Laws (1988/90)

istrative work to process as a grant with a million dollar budget. Since a number of indirect cost elements that support a grant represent fixed costs, it is sometimes argued that **smaller** projects should pay **higher** rates. Such a variable rate structure would be quite cumbersome to apply, and inconsistent with the government's *Circular A-21* guidelines.

Researchers in the humanities typically receive smaller grants. They sometimes wonder what the indirect costs are paying for. Anyone receiving an NEH summer research salary of \$3,500 in FY 1991 would generate an additional 53% in federal funds, or \$1,855 for indirect costs. They may feel that they don't need laboratory space and expensive equipment and should instead be assessed at a different rate. A more comprehensive look reveals that more of the institution's resources are used than seems

apparent on casual reflection (for example, costs for maintaining the library and its collection, support of graduate student assistants, and the cost of grant accounting and administration).

The library is a good example of a major resource necessary for research but often taken for granted and not recognized as a component of indirect costs. The library is used by virtually everyone engaged in scholarly activity, and the availability of this asset depends on the flow of indirect cost reimbursements used to support the University's library system.

The increasing number and complexity of requirements imposed by the federal government to ensure compliance with various regulations also contribute to indirect costs. Chart V lists new or revised federal regulations that have come into effect just since 1988. They require the University to institute new or expanded monitoring activities, to submit certifications, and, in general, to handle a great deal more paperwork than ever before.

11. How has the indirect cost rate changed?

Chart VI shows how the indirect cost rate has changed at the University of Washington during the last two decades. Starting from a 40% rate in 1969, based on salaries and wages only, the rate gradually increased. In 1979 the federal government revised *Circular A-21* and changed the base to the modified-total-direct-cost approach discussed earlier. In terms of the calculation of the indirect cost rate (Chart I), this change increased the denominator in the formula, thus lowering the overall rate to the low 30's, where it remained steady until about 1983.

During the early eighties, the University was successful in negotiating with the State of Washington to change the way in which the indirect cost funds received by the University were handled. Until that point, the indirect cost funds basically reverted to

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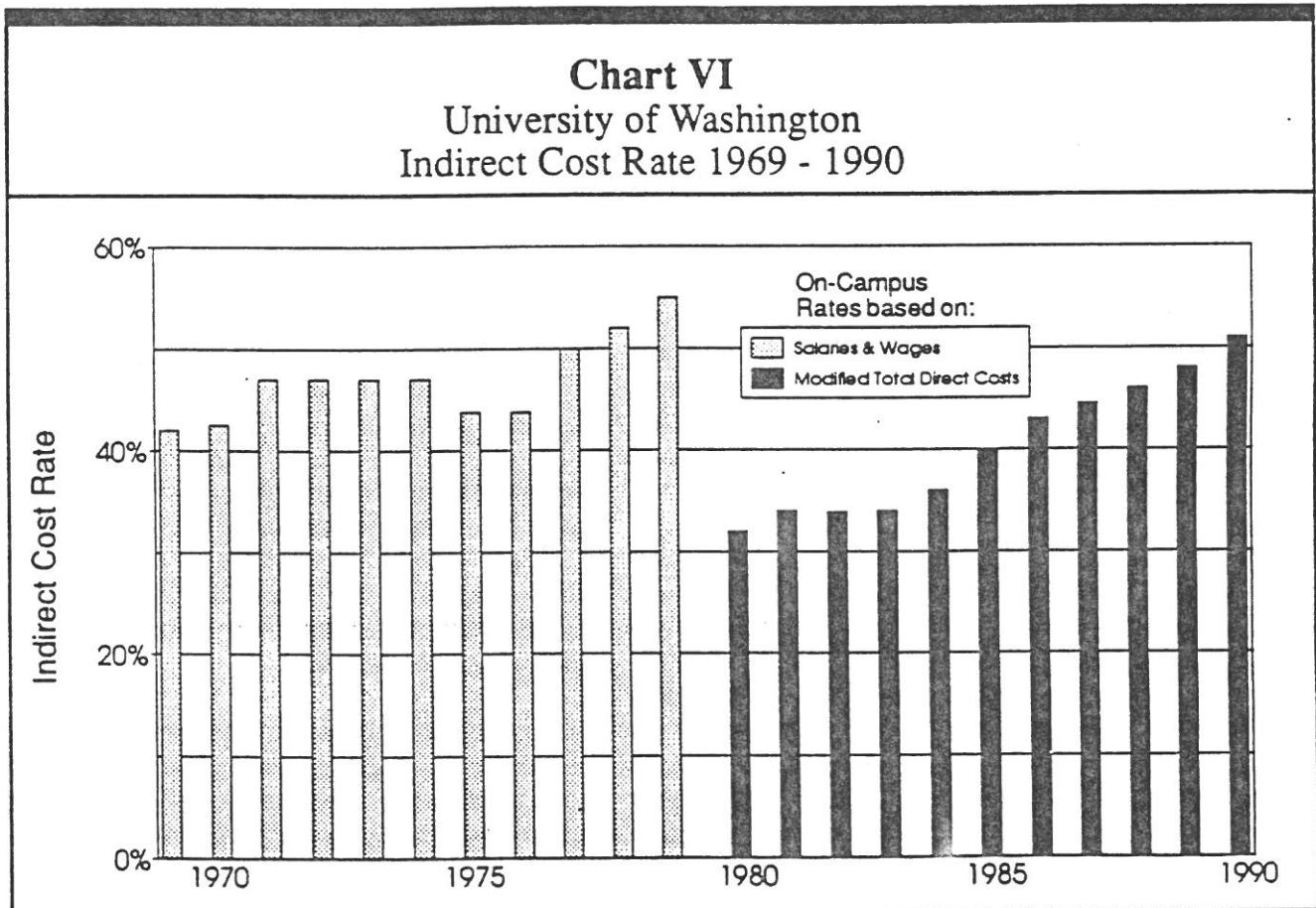
the State. In return, the State made an off-setting adjustment in the University's budget based on a forecasted amount (invariably too low) for such costs. Even if the UW subsequently generated more indirect cost revenue, it might not have been allowed to spend the funds.

In 1983 the State and the University agreed to a revenue-neutral transfer of authority for the indirect cost component of the budget. In other words, the State agreed to allow the University to retain its indirect cost revenues as received and discontinued the off-setting adjustment. From that year forward, any increases in indirect cost revenue received by the University have accrued, in essence, to the institution. This approach provides the University greater flexibility and increased incentive to recover a more realistic portion of the indirect costs from the federal government. As Chart VI shows, the indirect cost rate has gradually

In some states, indirect cost rates have deliberately been kept low on the theory that aspiring research institutions would be more competitive for federal grants.

increased during the 1980s in order to recover sums that more nearly approximate the University's actual costs. The present rate is 53%.

It should be noted that the University is engaged in a major capital construction program, in part to support the research activities on campus. New buildings will add to the first cost pool (the use allowance for buildings). That means that, in prin-



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inciple, a higher indirect cost rate could be justified in the future. However, any such change would involve a complex balancing act involving many factors and would require the administration to initiate discussions with the faculty and the cognizant agency.

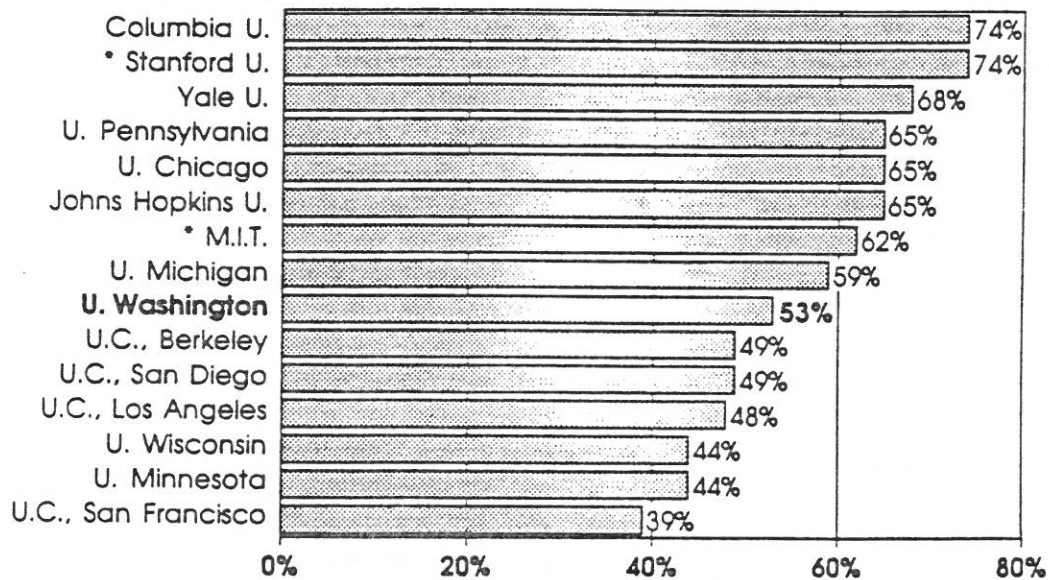
than that figure, and public universities about 5% lower.

The differences in the rates have often been cause for scrutiny and discussion. There are a number of factors that give rise to these differences. As already indicated, the first item in the indirect cost pool is the use allowance (resembling depreciation) for capital resources. An institution that has a large number of research facilities, with some built recently at higher cost, will have higher expenses in **Cost Pool I** than an institution that has a smaller and/or older physical plant. Additionally, private institutions generally try to recover as fully as possible the permitted use allowance on research facilities, whereas public institutions have tended to be less aggressive, since their buildings are often funded by the state. In some states,

12. How does our overall indirect cost rate compare with other universities?

Chart VII shows that indirect cost rates vary greatly among major research institutions, and indeed a few institutions not shown on the graph lie outside the 30% to 70% range. The average rate among all research universities is around 50%, with private universities having an average about 5% higher

Chart VII
Indirect Cost Rates
of Fifteen High-Volume Research Universities
(On-Campus Federal Research FY 1991)



* In 1991 the Stanford rate was unilaterally lowered by the Office of Naval Research to 55.5% and the MIT rate was reduced to 57.5%

Note: All rates based on Modified Total Direct Cost (MTDC).

However, it can be argued that institutions which arbitrarily limit themselves to indirect cost rates below their actual costs are simply allowing the granting agencies to underwrite disproportionately more services and newer facilities at competing institutions with relatively higher rates.

indirect cost rates have deliberately been kept low on the theory that aspiring research institutions would be more competitive for federal grants. Such decisions can result from a deliberate plan by the state and university to subsidize their research programs with nonfederal resources.

Significant differences, especially in the capital facilities cost pool, also result when an institution decides to change from the use allowance method to a full depreciation calculation. This approach can be used to justify a significantly larger indirect cost return if the institution is willing to bear the cost of a much more extensive accounting effort. Some private institutions do so. The additional accounting costs can again be added to the indirect cost pool for administration.

Costs may also differ because of internal institutional policies regarding direct versus indirect costs and how they are defined. For example, at some universities secretarial costs may be generally considered as indirect costs, while at others, secretarial support may be generally charged directly to the grant. As a result, a given university may show a higher **direct** cost on grants and a lower **indirect** cost rate than comparable costs at another university, even though the actual cost of the particular function is exactly the same at the two institutions.

Simple variations in the cost of utilities or labor in different geographic areas may contribute to rate differences. A study in 1988 showed utility costs in the New York area were ten cents per kilowatt hour for electricity compared to two cents per kilowatt hour in the Seattle area. Costs in Seattle have since gone up significantly, but they are still lower than most areas of the country. Similarly, heating and air conditioning costs vary widely across the country, as do labor and construction costs.

Thus, it is generally conceded that there are legitimate differences in costs among institutions across

Indeed, space costs are the single most important factor in the indirect cost differences between institutions.

the country that should be recognized by the government in the award of indirect costs. However, it can be argued that institutions which arbitrarily limit themselves to indirect cost rates below their actual costs are simply allowing the granting agencies to underwrite disproportionately more services and newer facilities at competing institutions with relatively higher rates.

13. Are the cost pool percentages similar at most research institutions?

Chart VIII compares the percentage of indirect cost assigned for some of cost pools at a number of universities. This chart is derived from a study completed in 1988 by the Ad Hoc Committee on Indirect Costs of the Association of American Universities (unfortunately, more recent data are not readily available). Clearly, relative values for some pools differ widely. The total space category ranges from less than 7 percent of the indirect cost

At the UW . . . General Administration only changed from 10.2% to 10.5% from 1984 to 1990 whereas the total indirect cost rate went from 36% to 51% during this same period.

buildings and a very large physical plant. In addition, Stanford uses the full depreciation schedule approach rather than the use allowance approach that yields only 2%. There is a difference of over 25 percentage points between the low and the high figures in this category alone. Indeed, space costs are the single most important factor in the indirect cost differences between institutions.

calculation at the University of California at San Francisco to over 33 percent for such institutions as Penn, MIT, and Stanford. The rate for UCSF is low, in part, because it has a smaller and older physical plant. The 2% use allowance does not generate much in the way of indirect costs for this pool. By contrast, Stanford has a number of new

It has been a principle with the federal government that there should be a single indirect cost rate for each institution's on-campus research.

Chart VIII
Comparison of IDC Components

Institution	Audit Agency	Total Space*	Total Admin.*	Library*	Total Proposed	Total Negotiated
Stanford	ONR	33.50	31.00	6.90	71.40	70.00
Brown	ONR	31.33	28.60	5.07	65.00	65.00
Princeton	DOE	26.80	35.19	11.45	73.44	64.00
Penn	HHS	33.80	31.70	2.20	67.70	61.00
Cornell	ONR	28.63	24.51	7.03	60.17	60.60
MIT	ONR	33.06	23.77	2.66	59.49	59.49
Hopkins	HHS	31.85	27.07	1.80	60.72	59.00
Illinois-Urbana	ONR	29.32	29.56	2.74	61.62	55.20
Virginia	HHS	19.93	28.42	1.89	50.24	50.00
Michigan	HHS	24.50	36.20	2.80	63.50	50.00
Wisconsin-Madison	HHS	20.00	23.70	1.20	44.90	43.00
UW	HHS	15.77	26.78	2.82	45.37	41.22
Missouri-Columbia	HHS	16.79	22.06	3.72	42.57	37.50
UCSF	HHS	6.43	25.18	0.80	32.41	32.40
AVERAGE		25.12	28.12	3.79	57.04	53.46

* Cost Pools I & II
 * Cost Pools III-V plus VII
 * Cost Pool VI
 Based on 1987 Data Provided by COGR

It is often argued that a major reason for the substantial increase in indirect costs is that the costs attributed to administration vary widely and

The effective rate of indirect cost recovery . . . was about 28% . . . The actual indirect costs recovered in FY 1991 were approximately \$68 million . . .

have been rising dramatically at universities. The reality is somewhat more complex. The average rate for the administrative components for institutions shown in Chart VII was 28%. Most of these universities were within three or four percentage points of this average. Moreover, the indirect cost component for general administration has remained remarkably constant in the last ten years.

At the UW, during the ten-year period from 1983 to 1992, General Administration (Cost Pool III) changed from 9.5% to 11%, and Departmental Administration changed from 10.7% to 14%. Interestingly, General Administration only changed from 10.2% to 10.5% from 1984 to 1990, whereas the total indirect cost rate went from 36% to 51% during this same period.

It should be noted that a 1991 change in *Circular A-21* imposes a cap of 26% on administrative costs. The administrative component (generally identified as Cost Pools III-V) for the University of Washington's 1991-93 negotiated indirect cost rate is 27.1% (ignoring carry-forward). That means the University will not be able to recover costs which exceed the 26% cap in fiscal year 1993 and will have to subsidize any difference from institutional funds.

Another column of Chart VIII shows figures for library charges. Here the variation, as with the total space component, is quite substantial. Part of this can be attributed to economies of scale. At an

institution such as Princeton, which has a fairly small undergraduate population but a very large research program, the majority of the costs of its extensive library holdings and library activity must be attributed to the research enterprise. At the University of Washington, with large undergraduate enrollments, there is an economy of scale which makes the effective cost of sustaining the research part of the library's activities significantly lower.

14. Why should I pay the same rate as my colleague for indirect costs?

Implicit in the accepted procedures for determining indirect costs is the notion of averaging. It has been a principle with the federal government that there should be a single indirect cost rate for each institution's on-campus research. Since every grant is different and places unique demands on the institution's resources, some grants recover relatively more in indirect costs and some recover less. Nevertheless, everyone should be aware that since the recovery of indirect costs is generally well below the actual cost of supporting research, probably no one is paying more than could be justified, even though someone may be paying more relative to another colleague.

The disadvantages of using an average rate can be easily stated. It is obviously not a precise method, and it lacks incentives for efficiency. Questions of fairness arise because comparisons can be made that superficially seem to suggest that one person is at a disadvantage relative to another. But the alternative to averaging would have few proponents. It would require an extremely complex (and costly) accounting effort to attribute a different indirect cost rate to each grant. Substantial fluctuations in cost recovery rates would arise, depending on when a person utilized a particular resource, the starting date of a grant compared to the fiscal year, and so forth.

The averaging approach is a convenient and straightforward method. The differential impacts tend to

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balance out over time, and the stability of the rate benefits most participants. If one takes into account the broad range of variability over time and over various research activities, the averaging approach seems the best of admittedly imperfect alternatives.

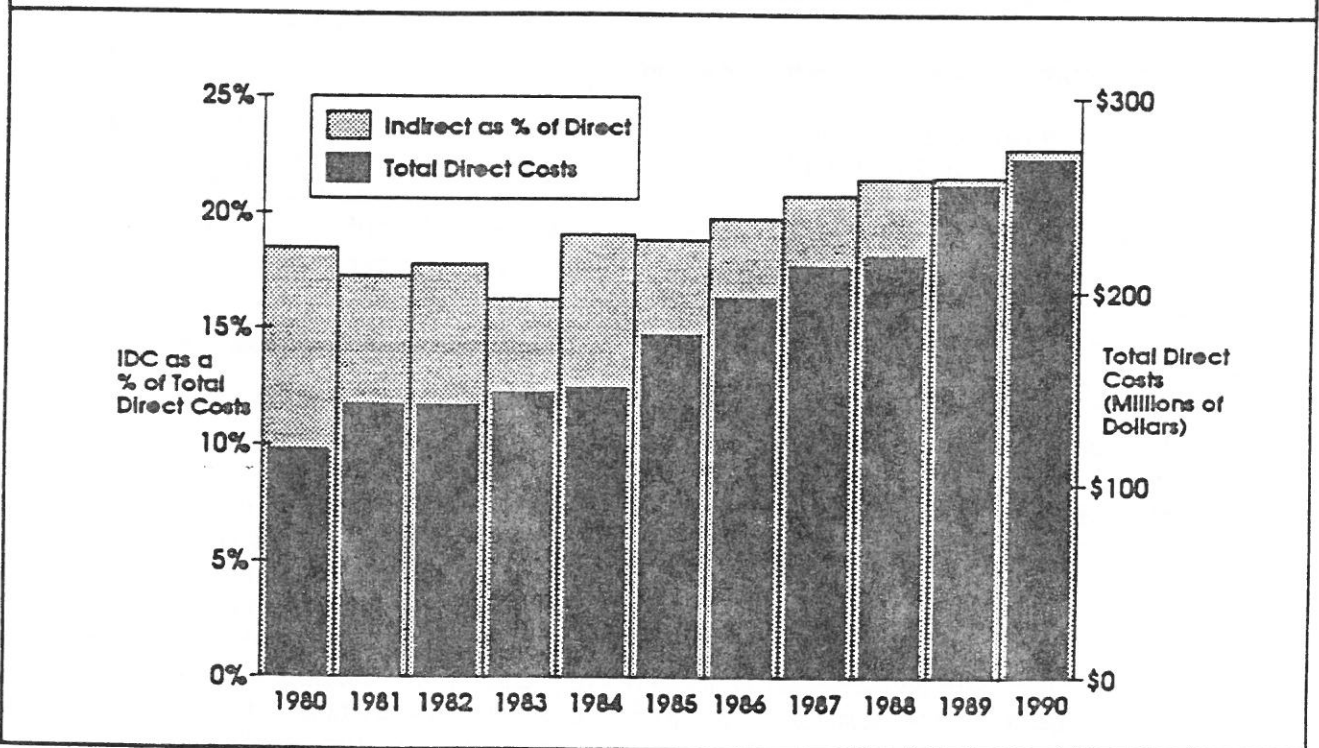
several reasons, but certainly is erroneous because the \$350 million figure already includes indirect costs.

A revised calculation would suggest that direct costs for grants of about \$234 million must have yielded \$117 million in indirect costs, the two together totalling approximately \$350 million in FY 1991 awards. This is a more appropriate calculation but is still not correct. It is not appropriate to apply the rate to the total direct costs (TDC), since indirect costs are calculated on the basis of MTDC, not TDC. Further, research carried out at Harborview Medical Center and other off-site locations such as observatories and accelerators is charged at a lower rate because many underlying costs (facilities costs, for example) are borne by the grant or contract, or by other entities. Most training

15. How much indirect cost revenue accrues to the UW?

When the University announced a total of over \$350 million for grant and contract awards during FY 1991, some observers made a quick back-of-the-envelope calculation and estimated that a 50% indirect cost rate must have yielded the University \$175 million in indirect costs. This is incorrect for

Chart IX
University of Washington Indirect Cost Recovery History
Total Direct Costs vs. Recovered Indirect Costs
as a Percent of Total Direct Costs



grants are capped at an 8% rate. The Federal Department of Agriculture has established a 14% indirect cost rate for its competitive grants. National Science Foundation Presidential Young Investigator awards include only 10% for indirect costs. Grants from private foundations often allow only 10% for indirect costs. The net result of all of these factors means that the effective recovery rate for indirect costs is substantially below the maximum 53% on-campus rate allowed for federal grants at the UW.

Chart IX shows the effective recovery rate at the University of Washington during the last ten years. It was just under 20% in 1980 and just over 20% in 1990 if calculated on a TDC base. If the calculation were made on modified total direct costs (MTDC), the percentage would be slightly higher, but nowhere near what people generally think it to be. The effective rate of indirect cost recovery for all federal grants in FY 1990 was about 28% and nearly the same for industry grants. The actual indirect costs recovered in FY 1991 were approximately \$68 million, rather than the \$175 million that may have been estimated by some.

16. How does funding from the State of Washington fit into the picture?

The University's total annual budget is about a billion dollars, and the State of Washington provides approximately a third of this. Tuition revenue goes directly to the State to offset a portion of this expenditure. Roughly another third of the budget involves the UW's locally generated non-state funds for the hospitals, student housing and food services, self-sustaining units, and other auxiliary enterprises. The remaining third is provided through grant and contract activity, including indirect cost revenues, as described in the previous discussion.

The third from the State includes partial support for graduate teaching and associated research activities at the University. This is provided prima-

rily in two ways. First, the State pays the salaries of the faculty, who use part of their time to engage in graduate teaching and research. Some staff and operations support for the faculty is also provided by the State. The second way involves capital facilities: in most cases the State provides the lion's share of the construction and renovation funding that supports the graduate teaching and research program. As noted earlier, only 2% per year can be

Without the indirect cost revenues, our research enterprise would be only a shadow of its present size and quality.

charged to indirect costs for building use. Very few buildings are adequate for the 50 years it would take to recover their value from indirect costs, and this means that the State also contributes to the support of graduate teaching and research by providing functional buildings.

Compared to its capital and salary expenditures at the University, the State provides relatively small amounts for direct research funding. Total unrestricted State funding for research, including a wide range of special programs like the Center for Streamside Studies and the Child Development and Mental Retardation Center, amounts to less than \$2 million per year.

17. How important is indirect cost revenue to the University?

Indirect cost revenue is the primary source of support for the UW's extensive research programs. Consequently, any arbitrary indirect cost ceilings or other reductions in the indirect cost rate essentially amount to budget cuts, with serious impacts for University research. The indirect cost funds pay for a wide range of support services and administrative activities. They make it possible for

the institution to operate a first-rate library system for research and scholarship; they allow us to service, maintain and renew our research facilities. Without the indirect cost revenues, our research and graduate teaching enterprise would be only a shadow of its present size and quality. Indeed, without the growth in revenues from indirect costs since 1983, the UW would have been faced with very painful research-related budget cuts in the latter half of the eighties, and recent budget cuts would have been much worse than those experienced.

Although the indirect cost process identifies the *costs* incurred in supporting the research program (as outlined earlier in this document), the actual *budgeting* process cannot allocate funds efficiently on a simple item-for-item basis. For example, a \$100,000 federal research grant may generate an indirect cost payment of roughly \$32,000 (see Chart III), but it would not be practical to restrict expenditure of the \$32,000 solely to the indirect costs incurred by that specific grant in that particular year. (The roof may not need to be repaired that year.) It may help to recall the definition of indirect costs in this connection.

18. How has the increase in indirect cost revenues been allocated?

Anyone who has submitted grant proposals during the last half dozen years is aware of the significant increase in the indirect cost rate—from 33% to 53% between 1983 and 1990. Where has the resulting revenue gone? Roughly half of that increase has been returned directly to the colleges, schools and departments—a significant commitment to help support the costs of research activity directly at the academic unit level. This research support allocation to each unit now amounts to approximately 15% of the indirect cost revenue generated by the unit during the previous year. Units also benefit from a less obvious but continuing subsidy referred to earlier as the Department Administration Cost Pool, especially in units with an active research program. Departmental allocations are discussed in Section 20.

In other words, a much more macroscopic approach is called for when dealing with expenditures. When the University develops its budget for a particular biennium, it starts with an estimate of the total revenues available for that biennium, including State funding, indirect cost revenue, interest and investment income, and so on. Arrayed against this projected total income figure is the wide range of anticipated expenses that must be funded. Some expenses are relatively predictable, such as salaries, but other categories cannot be pinned down as easily in advance. Utility costs, self-insurance costs, regulatory compliance costs, responses to competitive salary offers, special matching requirements for major equipment proposals, and many other costs cannot be accurately predicted.

19. How are indirect cost revenues related to University expenditures?

University budget policies have, in general, directed indirect cost revenues to the support of research in a manner consistent with the pattern of expenditures in the University's audited indirect cost studies and rates. Given that the UW does not recover all its indirect costs (the effective rate is less than the audited rates), other University funds must be used to help pay for these activities.

Just as in any budgeting process, prudent judgments must be made to try to match total projected income with total projected expenses, including planned improvements and new programs. In this process, efforts are made to relate the *projected* indirect costs of research and training to the *estimated* indirect cost revenues. In actuality, all the previously mentioned fund sources are combined to support the total budget identified in the University's policy-based and priority-driven budget process. The expenses identified in the cost study used to justify the indirect cost rate are real expenses which have been paid for by the institution from the total pool of available fund sources.

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Although there is a correspondence between indirect cost revenues generated and the amount spent in support of the research enterprise, it is not

... the expenses identified in the cost study used to justify the indirect cost rate are real expenses which have been paid for by the institution using all available fund sources.

considered cost-effective to keep track of this correspondence in detail. Nevertheless, approximate figures for the distribution of these funds can be extracted from the University budget data. An approximate breakdown of the indirect cost expenditures for FY 1991¹ is summarized in Chart X. These indirect cost revenues supplement other

traditional revenue sources in the various University budget categories. For example, roughly \$12 million was allocated to "Instruction" which corresponds to budget category 01X in the UW budget and accounting system. Most of the remaining funding for this budget category (01X) is provided by the State and pays mainly for faculty and staff salaries.

Indirect cost revenue is either allocated directly to schools and colleges or used to support research-related costs for operations and maintenance (physical plant), libraries, general administration, sponsored research administration, and buildings. In addition to the dollar amounts shown, Chart X indicates the approximate percentage that indirect cost revenue provides toward the overall expenditure in several of the other major budget categories. A more detailed analysis of "Allocations to Schools/Colleges" shown in Chart X is provided in the next section.

Chart X
Approximate Breakdown of \$68 Million
in Indirect Cost Expenditures in FY1991

	Budget Category	Amount	Percent supported by indirect costs
Allocations to Schools/Colleges			
Instruction *	01X	\$12M	6% of total 01X funding
Graduate Research **	02X	11M	82% of total 02X funding
Academic Support*	04X	3M	10% of total 04X funding
Subtotal		\$26M	
Research-Related Costs			
Libraries	05X	3M	12% of total 05X funding
Institutional Support	08X	17M	37% of total 08X funding
Physical Plant Operation & Maintenance	09X	18M	35% of total 09X funding
Buildings Capitalization		4M	
Indirect Cost Revenues Total		\$68M	

* 74-xxxx funds allocated to academic units (see Chart XI)

** Largely from 75-xxxx funds (see Chart XII)

20. What are the specific allocations to Schools and Colleges?

Before 1983, indirect cost revenues reverted to the State (see Section 11), which then made an off-

setting adjustment in the University's budget. Although the indirect cost revenue benefited the University, the corresponding funds were included in the institution's budget as an indistinguishable portion of the State's allocation. No separate budget classifications distinguished between State support and indirect cost revenue, but a portion of

Chart XI
University of Washington
1990-91 College/School Designated Operating Fund Budgets
(Permanent 74-xxxx Accounts with Benefits)

College/School	Instruction	Research	Academic Support	1990-91 TOTAL 74-xxxx	1990-91 G&C Total Awards*
General University					
Architecture & Urban Planning	\$ 41,601	0	\$ 11,749	\$ 53,350	\$ 370,098
Arts & Sciences	4,300,709	15,076	429,595	4,745,380	48,926,070
Business Administration	32,195	0	13,893	46,088	279,300
Education	70,418	0	174,309	244,727	4,797,856
Engineering	1,596,484	140,321	274,635	2,011,440	24,675,119
Forest Resources	116,209	130,867	133,834	380,910	6,608,349
Graduate School	65,129	102,830	381,192	549,151	2,301,271
Law	67,451	0	4,944	72,395	393,450
Ocean & Fishery Sciences	1,123,817	48,920	119,188	1,291,925	43,476,119
Public Affairs	57,661	4,436	0	62,097	2,139,676
Social Work	196,603	0	450	197,053	5,045,894
Total General University	7,668,277	442,450	1,543,789	9,654,516	
Health Sciences					
Dentistry	344,498	0	0	344,498	3,337,987
Medicine	3,403,688	0	824,088	4,227,776	144,518,830
Nursing	128,160	0	136,608	264,768	7,820,072
Pharmacy	100,428	0	73,147	173,575	4,343,086
Public Health & Community Med	405,037	4,285	136,573	545,895	24,818,184
Total Health Sciences	4,381,811	4,285	1,170,416	5,556,512	
TOTAL	\$12,050,088	\$446,735	\$2,714,205	\$15,211,028	

* The grant and contract awards include only the awards administered in schools/colleges

this total "State" funding obviously supported faculty and staff in units with active sponsored research programs.

When the State agreed in 1983 to transfer indirect cost revenues to a separate fund, the UW was required to move an appropriate number of faculty

. . . an informed and united academic constituency will be necessary to sustain reasonable funding levels for research and for higher education more generally.

Chart XII

1990-91 UW College/School Designated Operating Fund Budgets Research Support Allocations (75-xxxx Accounts)

Colleges/Schools	1990-91 Budget
General University	
Architecture & Urban Planning	\$ 5,033
Arts & Sciences	1,710,312
Business Administration	3,781
Education	73,580
Engineering	759,418
Forest Resources	110,444
Graduate School	329,787
Law	1,355
Ocean & Fishery Sciences	951,959
Public Affairs	21,379
Social Work	110,087
Vice Provost for Research	303,013
Total General University	\$4,380,148
Health Sciences	
Dentistry	112,861
Medicine	4,249,990
Nursing	146,411
Pharmacy	97,036
Public Health & Community Medicine	449,205
Vice President Health Sciences	711,998
Total Health Sciences	\$5,767,501
TOTAL	\$10,147,649

and staff positions from the State budget to the new fund and to assume responsibility for benefits and salary increases for those positions from indirect cost income. For this reason, the salaries of some faculty and staff members are formally assigned to 74-xxxx accounts. In all other respects, these positions are treated exactly the same as comparable positions funded by the State, and the accounting distinctions are all but indiscernible to those funded in this way. The 74-xxxx expenditures for faculty and instructional support staff in the various Schools and Colleges are shown in Chart XI under "Instruction." The total for that column of just over \$12 million corresponds to the amount shown for "Instruction" in Chart X.

Budget numbers 75-xxxx are used for the annual allocation to schools and colleges, now called the Research Support Allocation. Instituted after 1983, this funding is not intended for permanent commitments such as faculty or staff positions. Chart XII shows the level of such allocations to the schools and colleges for 1990-91. The combined total of over \$10 million shown in Chart XII for 75-xxxx allocations and the nearly \$500,000 shown in Chart XI for 74-xxxx allocations corresponds to the \$11 million (rounded) total shown in Chart X on the line designated "Research" (02X). In short, the 74-xxxx and 75-xxxx budgets represent direct allocations to the units of a portion of the indirect cost revenues actually collected.

Departmental records will reflect the various budget categories funded in this way (for departments with an active sponsored research program). The 74-xxxx budgets provide significant funding for

instruction and for academic support. The latter category (04X) includes support for deans' offices, computing, and other ancillary academic support units. The *combined* indirect cost revenue returned directly to schools and colleges in 1990-91 amounted to over \$25 million or about 37% of the total indirect cost revenue of approximately \$68 million received by the University.

Conclusion

It is hoped that this account of the nature and present management of indirect costs will be of value to the University community. While the subject is of immediate relevance for those who propose and are awarded research grants, it is important that members of the faculty, staff and student body recognize that funding for a significant proportion of the University's programs is derived from indirect cost revenues.

The purpose of this overview is to promote a broader understanding of these issues. An ongoing goal is to address responsibly any questions and misunderstandings regarding indirect costs and to elicit carefully reasoned suggestions for improving our present practices to enhance the environment for teaching, research and scholarship at the UW. An increasingly important and parallel objective is to clarify this complex subject for the public, on whose support and advocacy we depend. As pressure on federal budgets mounts and efforts are made to adjust federal funding patterns, an informed and united academic constituency will be necessary to sustain reasonable funding levels for research and for higher education more generally.

Alvin L. Kwiram
Vice Provost for Research

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