Indirect Costs: The Gathering Storm

The furor touched off by Stanford's accounting abuses has resulted in a string of proposals from Congress and the Administration to clamp down on university overheads

UNTIL RECENTLY, THE COMPLICATED PROCESS by which universities claimed reimbursement for the indirect costs of research was pretty much like the weather: Everybody complained about it, but nobody did anything about it. Not anymore. Thanks to a yacht owned by Stanford University, a stormy congressional hearing chaired by John D. Dingell (D–MI), and an exposé on the ABC prime-time program "20/20," everybody wants to do something about indirect costs. Indeed, some have already taken preliminary action, and the overriding question now is how far will these actions go, and what will be their long-term impact on the scientific community?

In the last week alone, the White House Office of Management and Budget (OMB) put out a list of items the government will no longer accept as indirect cost charges, the Massachusetts Institute of Technology became the fourth university to withdraw dubious indirect costs it had already billed the government for (see table below), and the chief of Naval research told Stanford that the government was slashing the university's allowable indirect cost rate from 70% to 55.5%. But as dramatic as these steps are, none gets at what all agree are needed revisions in the indirect cost recovery process. The present turmoil may force the government to address the problem of paying for research infrastructure head-on, instead of sweeping it under the indirect cost rug. Congress and the Administration are wrestling with a wealth of suggestions. Among the most draconian (or needed, depending on your point of view): putting a fixed cap on the percentage of direct costs that the government will reimburse as overhead, barring a university caught abusing the rules from receiving federal grants for a year or so, and strictly limiting the kinds of items that can be charged as indirect costs.

It will be at least another month before the first set of concrete proposals is in. In the meantime universities, like anxious forecasters, are watching the process to see which way the winds are blowing on indirect cost.

Ironically, despite the heat they are taking for some of the well-publicized abuses in the use of indirect cost dollars, universities can justifiably say "We told you so." Since 1988 they have not only argued that changes were urgently needed in the indirect cost recovery process, they even came up with a concrete set of proposals to change the system. Scientists, too, have complained for years about the Byzantine rules for reimbursement, often charging that they have allowed university administrators to make off with an overly large fraction of their hard-earned research support. This widely held belief has led to suspicion and sometimes outright hostility on campuses around the country. As National Academy of Sciences president Frank Press put it in his address to the academy members this week, "The indirect cost issue is alienating faculty from university administrators, as well as federal research sponsors and private foundations from the universities." Despite warnings from a dedicated band of insiders who follow the issue assiduously, both the complaints of scientists and the reform proposals of administrators were largely ignored both in Congress and by the Administration.

The Stanford yacht, shopping center, and floral arrangements changed all that. "[The issue of indirect costs] has a lot more sex appeal than it did," says Thomas J. Bliley Jr. (R–VA), the ranking minority member of Dingell's oversight and investigations subcommittee. And there's nothing Congress likes better than investigating a sexy problem.

Under the not-so-gentle prodding of the Dingell committee, Defense Department auditors scoured Stanford's books for the Office of Naval Research, the defense agency that sets Stanford's indirect cost rate. Last week, the chief of Naval research informed Stanford that all previously negotiated agreements covering indirect cost allowances would be canceled, and the university's provisional rate for 1991 would be 55.5%, well below the 78% the university had initially proposed and the 70% provisional rate established earlier this year. That will cost Stanford about $24 million a year in federal funding. Stanford president Donald Kennedy last week called the government's action regrettable, adding that "knowledgeable observers inside and outside the university believe that the 55.5% provisional rate is far below that needed to recover Stanford's real cost of federally sponsored research." Stanford also announced earlier this week that its internal audit for the years 1981 through 1988 had identified some $925,000 in charges it would be returning to the government. And that number is expected to grow as the audit continues.

What's happened to Stanford may be repeated at other universities. Seventeen are being audited by various government agencies (*Science*, 19 April, p. 365), and many are busy scrubbing their books. When MIT joined Harvard and Caltech in voluntarily withdrawing questionable charges, the Cambridge behemoth might have viewed its peace offering of $731,000 (including $27,317 in legal expenses incurred by the university

SOME RESULTS OF SCRUBBING THE BOOKS

University	Years covered	Amount withdrawn	Total federal support	Selected charges withdrawn
MIT	1986-1990	$731,000	$3,200,000,000	Decorations for the president's house, certain foreign travel, MIT Corporation reception
Harvard Medical School	1991	$500,000	$38,900,000*	Costs related to president's house and nonsalary expenses of medical school dean
Caltech	1987-1990	$500,000	$330,000,000	Office expenses for three vice-presidents and the president
Stanford	1981-1988	$925,000	$1,347,500,000	Yacht depreciation, decorations for president's house, costs related to shopping center

*estimate

to prepare for former faculty member and Nobelist David Baltimore's appearance before Dingell's committee in a hearing in 1989 relating to scientific misconduct) as sufficient. But Dingell staff members have indicated to *Science* that they believe MIT officials have been uncooperative, and that they will have plenty more to answer for when Dingell holds his next hearing—now scheduled for 9 May—into the indirect cost question.

While Dingell devotes himself primarily to whether the rules that are currently in effect are being properly followed, OMB began the process of revamping the regulations last week by proposing a list of 13 categories that would no longer be allowable for reimbursement. Six of these are:

- costs for entertainment and alcoholic beverages
- expenses related to the living quarters of university officials
- costs for membership in social, dining, or country clubs
- lobbying costs
- costs for defense in fraud suits brought by the United States against university scientists
- fines and penalties for legal infractions

A working group within OMB—reportedly chaired by Francis S. M. Hodsoll, OMB chief financial officer—is considering more substantial changes to Circular A-21, the document that prescribes the general policies and guidelines for the costs charged to federally funded grants and contracts by educational institutions. Insiders believe that while OMB may change Circular A-21 substantially, the agency is unlikely to scrap the document since it would take years to rewrite.

While few would argue that OMB has gone overboard in its initial set of disallowed costs—indeed, it's hard to see how some of these costs were ever permitted in the first place—a debate surfaced during hearings held last week before the House subcommittee on science chaired by Rick Boucher (D–VA). Roland W. Schmitt, president of Rensselaer Polytechnic Institute in Troy, New York, told the committee that no amount of tinkering with Circular A-21 will remove all the gray areas when it comes to deciding whether a particular cost should be allowed. In testimony, Schmitt pointed out that part of his salary is charged against federal research grants as an indirect cost, but there's no firm formula for deciding what fraction of that salary is appropriate. "If universities always bias the 'gray decisions' in their own favor *and* if there are inadequate compliance audits then there will be a drift of the system toward unacceptable aberrations."

Schmitt argued that more frequent audits would help clear up the kinds of "misunderstandings" that have led to the current furor. But Fred J. Newton, deputy director of the Defense Contract Audit Agency, told the committee that audits alone would not solve the problem. While admitting that the ambiguities of Circular A-21 were "a gross problem," Newton said it did provide an adequate framework for cost recovery if universities exercised stronger financial management: "That's where the abuses seem to be—in how things are implemented."

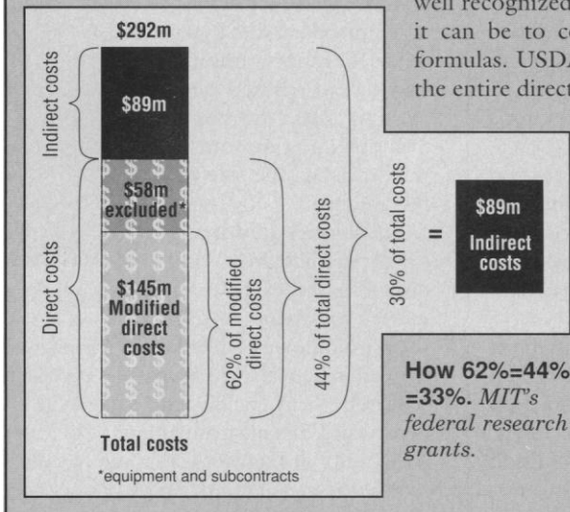
Not so said Cornelius J. Pings, provost of the University of Southern California and

Capping an Infected Wisdom Tooth

Lately, members of Congress, Administration officials, and even some in the higher education community are talking about putting a cap on indirect costs as a way of holding down the rate of growth of overheads and simplifying the way they are calculated. But it is fair to say that one cap size won't fit every sore tooth, and there are many different styles of caps that can be applied.

Not generally known to faculty members outside agriculture departments, Congress has already mandated a type of cap that has dismayed many universities. Last year, Congress told the U.S. Department of Agriculture (USDA) to abandon Circular A-21, the Office of Management and Budget's (OMB) infamous blueprint for calculating indirect costs, and switch to a simple formula for its competitive grants: pay no more than 25% of the direct cost of a grant as indirect cost. But even that wasn't enough for Congress: This year, it told USDA to reduce that figure to 14%.

Why would any university accept a grant with a 25% indirect cost rate (let alone 14%) when the indirect cost rate nationwide is closer to 50%? There's a simple, if not well recognized, answer that shows how tricky it can be to compare different indirect cost formulas. USDA bases its indirect cost rate on the entire direct cost of a project. OMB's A-21 rules, however, require that certain charges such as equipment and subcontract costs more than $25,000 be subtracted from the total direct costs before indirect costs are calculated. This means that a 25% USDA rate might translate to a 40% OMB rate.



How 62%=44% =33%. *MIT's federal research grants.*

Take the example of the Massachusetts Institute of Technology. In 1990 MIT calculated its total direct cost for research carried out on campus (excluding the defense-oriented Lincoln Laboratory) at $203 million. But $58 million was excluded under OMB's rules, making its modified total direct cost $145 million. Since MIT's indirect cost rate is 62%, it recovered $89 million from the federal government. That works out to 44% of total direct costs—still higher than USDA's 25% cap, but not drastically so. Nevertheless, figured that way, the university would have lost approximately $38 million in funding if all its indirect costs were calculated according to the USDA formula. Applying the 14% rate, it would have lost a staggering $60 million. Indeed, now that Congress has forced USDA to slash its cap to 14%, many universities are said to be considering declining to put in for USDA competitive grants.

Another formula now being discussed would cap just the administrative cost portion of indirect costs—a fraction that typically accounts for half of the overall indirect cost rate. In 1986 the Department of Health and Human Services actually did impose an administrative cost cap of sorts, limiting to 3.6% the fraction of faculty members' salaries that could be charged to administration. Now the department is discussing placing a cap on all administrative costs. Some universities have been leery of this idea, however, because they fear the government would use too low a figure in setting the cap. ■ J.P.

principal author of a 1988 report on indirect cost by an ad hoc committee of the Association of American Universities. Pings told the committee that the real problem lies in the complexity of the rules and the cost of implementing them. His solution: Split indirect costs into two components, administration and facilities, and let universities charge a fixed proportion of direct costs to administration without documentation—just like the standard deduction on an income tax form—or document that a higher rate was appropriate. For facilities, Pings said the government should allow faster depreciation to reflect more accurately the useful lifetime of buildings and scientific equipment. David Packard, chairman of the board of Hewlett Packard, also argued for a cap on administrative costs but suggested that universities should be paid directly for facilities, not via indirect charges to research grants.

Capping some fraction of indirect costs appears to offer a simple solution—the House and Senate agriculture appropriations subcommittees, in fact, have already capped indirect costs on some types of research grants. But, depending on how the caps are implemented, there could be problems (see box, p. 637). An even easier and politically appealing option could be to levy fines against universities that are found to have overcharged the government. Some, including Congressman Bliley, have gone so far as to suggest an extreme option: instituting "the death penalty"—a prohibition from receiving any federal funds—for universities that are chronic abusers of the reimbursement system.

The debate before Boucher's subcommittee wasn't the only venue on Capitol Hill where indirect costs were at issue. In fact, so many congressional committees are jumping into the indirect cost issue—in addition to Dingell's and Boucher's subcommittees, the health and environment subcommittee chaired by Henry A. Waxman (D–CA) has entered the fray—that it is hard to get a fix on which proposals are being taken seriously. The first sign of where Congress may end up could appear in the House appropriations bills, which may be ready as early as next month, although appropriation action—rumored to be a cap on administrative costs—would only be in effect for the 1-year duration of the appropriation bill.

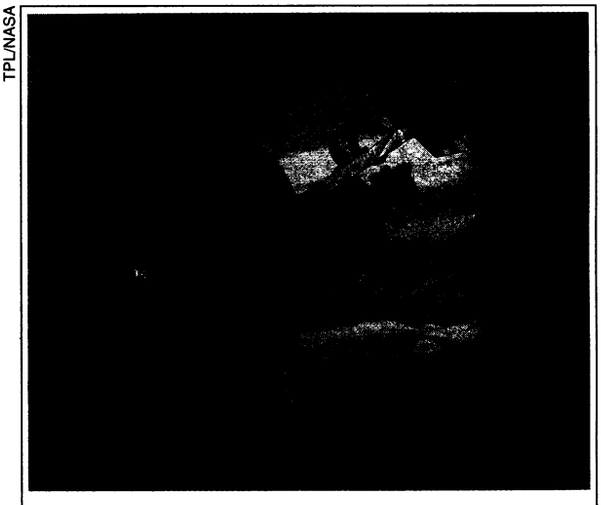
As for the Administration, OMB is also expected to announce its proposals by early June. Meanwhile, the universities are battening down the hatches and hoping they can withstand the political whirlwind that is swirling above them. And scientists will be wondering what will be left for them when the storm subsides. ■ JOSEPH PALCA

Galileo Hits a Snag

Inside the Jet Propulsion Laboratory's (JPL) towering Spacecraft Assembly Facility in Pasadena, a team of engineers is methodically furling and unfurling a fragile umbrella of gold-plated mesh stretched over graphite ribs, hoping to see it jam. They are trying to understand what has happened to the umbrella's twin, now millions of kilometers beyond their grasp in interplanetary space.

The distant umbrella is the main antenna of the spacecraft Galileo, on its way to a 1995 rendezvous with Jupiter. Last month the antenna failed to deploy fully as the spacecraft swung out toward the asteroid belt on the second leg of its roundabout journey. Unless engineers can free the balky antenna, Galileo will arrive at the largest planet as alert and capable as ever, but nearly mute. The snag jeopardizes a $1.3-billion mission at a time when a beleaguered NASA can ill afford any more embarrassments in space.

Trying to break one antenna in an attempt to fix another may seem perverse, but JPL engineers are baffled by the problem. After all, the same sort of antenna has worked perfectly six times on Earth-orbiting communication relay satellites. On 11 April, though, controllers at JPL commanded the spacecraft to open the 4.8-meter antenna, which had been kept folded out of harm's way since the spacecraft was launched from the space shuttle in October 1989. Drive motors churned and the antenna began to unfurl, but it never clicked into its fully open position. Something apparently got stuck on one side of the antenna.



The way it's meant to be: *Galileo at Jupiter*

To interpret the distress signals coming from the distant spacecraft, JPL engineers are trying to get their groundbased antenna into a similar bind. Then they'll have a better idea of what they are up against, and what the prospects are for a repair.

At stake is the bulk of the data Galileo was expected to gather at Jupiter. Properly deployed, Galileo's main antenna could return 134,000 bits of data per second from the vicinity of Jupiter. At that rate, a complete image from Galileo's camera could be sent home in 1 minute. And while sending pictures, the antenna would also be busy transmitting data from the other 12 experiments aboard.

In the absence of the main antenna, all these tasks would fall to Galileo's two small antennas, which are now transmitting engineering and scientific data at 1200 bits per second. That would suffice to return observations from Galileo's October flyby of the asteroid Gaspra—though the data would have to be recorded and then played back when Galileo swings by Earth in December 1992 for a final gravitational boost toward its destination.

At the great distance of Jupiter, though, the transmission rate of each small antenna will slow to a trickle—10 bits per second. That will do for relaying the 75 minutes of data from the probe Galileo will drop into Jupiter's atmosphere but would rule out any long, leisurely inspection of the planet, its magnetosphere, or its satellites.

The extremes of temperature Galileo will experience on its circuitous journey present the current best hope to solve the problem, project manager William O'Neil says. Perhaps chilling the antenna in the cold of the asteroid belt or simply in the shadow of the spacecraft will unstick it. If not, the sun's greater warmth when Galileo swings in again toward Earth might do the trick. At least time is on JPL's side—another 4 years, to be exact. "We can take our time to understand the problem," says O'Neil. "I'm optimistic we can get it open." ■ RICHARD A. KERR