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UNDERSTANDING THE HIGH COST OF SUCCESS IN UNIVERSITY RESEARCH

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Abstract

In light of new transparency in budgeting and expenditures expected of central research administration and reductions in the amount of indirect cost revenues distributed to colleges, departments, and faculty, universities must present a more accurate perspective on the "real costs" of research, costs that extend well beyond support for the central research office. The purpose of this article is to illuminate the significant gap between the real costs of research within universities and the funding that is available to support them.

Keywords

Indirect costs; University research; Facilities & Administrative (F&A); Research funding

INTRODUCTION

More opportunity exists for investigators to conduct innovative research and more diverse opportunities are available to support their efforts than ever before. Researchers also have an enhanced ability for collaboration within institutions and with others around the world. Continually advancing technology allows these interactions to occur faster and faster and over greater distances, and a well-trained workforce is available to participate in the research. However, for all of this to occur, greater administrative support is needed for investigators.

Success in research is a goal for every research university. It means new research dollars to support investigators, projects, students, and technical staff and provides new equipment and educational resources, travel, and many other opportunities that are not available without external funding. Equally as important, research expenditures are a criterion used in evaluating the strength and quality of a university, distinguishing it from others, and for ranking universities on national and international levels. The research profile of a university has value in the recruitment of outstanding faculty, administrators, staff, and students, especially graduate students who select a university for their studies on the basis of the reputations of faculty members and programs. Moreover, the research environment is a factor undergraduate students also use in selecting their school.

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Externally funded research is also valued by the community in which a research university is located, as new “imported” money translates into more highly skilled, high-wage jobs and the sale of goods and services, and it provides expertise that can be accessed by community programs to support their goals. Medical research extends and saves lives, and universities with medicine, science, and technology programs are often key in the relocation of companies to a region. Partnerships between universities and companies enhance research even further, typically in an applied manner, and university incubator programs often spin off new companies that remain in the area. The research enterprise becomes one of the major economic drivers for the community. The benefits to a university and its students, staff, community, and state cannot be overstated.

The costs to be competitive and the strategies to promote a competitive advantage for research success are high. Encouraging and supporting a healthy research enterprise expands an annual university budget well beyond the direct and indirect dollars received for sponsored projects and requires upward adjustment every year. In many growing research universities, these costs exceed even a satisfactory maintenance level because these institutions are characterized by movement and ambition and have aggressive agendas that include research portfolios that have grown faster and substantially beyond what the university infrastructure can comfortably bear.

The level of investment in research by a university has to be a conscious decision and one that is reaffirmed continuously, as the cost clearly outweighs the revenue that is brought into the university to support research. And the costs continue to escalate with more federal and state mandates for compliance with new regulations and with the general rising costs of facilities and equipment, personnel support, and the need to turn over high-tech equipment that is rapidly outdated.

For example, “keeping up with ARRA’s [American Recovery and Reinvestment Act of 2009] administrative requirements is costing institutions thousands [of dollars] of increased overhead and may be compromising or delaying other initiatives and projects at the nation’s leading research universities” (4). Emory University suggested that for every $1 million they received in ARRA funding, the university spent $14,000–$15,000 above the 26% administrative cap. Harvard estimated a 30% increase in reporting effort. This reporting requirement (quarterly with significant accountability measures) may have become the norm for reporting federally funded research. ARRA funding also demands additional audit effort within the university.

Moreover, many of the activities that are necessary to support research (such as administrative and clerical support, computers, postage, subscriptions, telephone service, and office supplies), once covered among the direct costs of a research grant budget, can no longer be considered direct charges and must be paid for by the overhead dollars (indirect costs) that accompany a grant award or by some institutional source.

REVENUE SOURCES THAT SUPPORT UNIVERSITY RESEARCH

Research, of course, does result in revenue to universities, and a multitude of sources can be counted on to fund university research:

- Sponsored grants and contracts (state, federal, and private sources)
- Special state support, including one-time special funds such as tobacco settlement dollars, oil spill penalty dollars, and federal stimulus monies
- Equity ownership in start-up and small companies housed at universities in business incubator programs
- Work for hire
- Reimbursable services and equipment facilities available to non-university research personnel
- Clinical trials
- Interest on invested funds
- Gifts designated for research (private donations)
- Income from auxiliaries
- License and royalty income
- Indirect cost revenue (Facilities & Administrative or F&A costs)
- Cross-subsidy from other institutional resources
- Means for new funding written into legislative language

Even with all of these resources for funding, the research enterprise—and all the areas of a university's mission—is compromised by a reduction of available dollars in today's downturned economic climate.

State universities depend on some level of funding from state appropriations (although it is diminishing every year). A survey conducted by the Association of Public and Land-grant Universities (APLU) (5) revealed that reduced state appropriations impact several areas of the research enterprise: loss of faculty and staff, diminished ability to maintain campus infrastructure, limited support for graduate students, reduced support for public/private partnerships, and cuts in externally supported research, as well as ongoing research projects.

With this as a backdrop, one needs to ask how (not whether) a university can afford success in research. The answer to this question requires an understanding of the institution and a determination of how much investment in the research activity can occur without sacrificing other elements of the university's mission. In order to succeed, a strategy should be designed to prioritize investments for research success.

Beyond the cost of the research itself, the maintenance of a university's research enterprise is significant and includes everything from personnel, buildings, incubators, technology, equipment, laboratories, and infrastructure to the costs related to compliance, safety, audits, reporting, legal expenses, partnerships, memberships, clinical trials, consultants, marketing, and lobbying, in addition to the funding required for grant matching, cost sharing, unfunded or underfunded indirect costs, managing scientific misconduct, and more (Appendix A).

DIRECT COSTS

Direct costs charged to a grant are those that are tied to a specific project and established in a budget managed by the principal investigator. Appropriate charges are listed in Table 1.

INDIRECT COSTS

Understanding F&A: The Nature of F&A, Calculations, Restrictions, and Limitations Imposed by the Federal Government

In 1996, the terminology changed from Indirect Cost (IDC) to F&A costs. F&A is one of the least understood aspects of the external funding of research. F&A is intended to reimburse (partially, at least) an institution for the *real* costs it expends to maintain the infrastructure that supports research conducted for the benefit of the federal government, the state, or the private sector (typically a foundation or industry). However, the costs extend well beyond the level of F&A reimbursed. These are costs that have already been incurred, yet the dollars are drawn down from a sponsor only when the direct costs are expended. F&A is not intended to supplement direct costs, but rather to cover common/joint needs that are not identified specifically with an individual project (Table 2). For example, library costs do not relate to National Science Foundation (NSF) grant “X” or National Institutes of Health (NIH) program project “Y” but are essential for all research activities within a university, whether funded or not. The same is true for the many other activities that are indeed “indirect” because they support (to some extent) general research infrastructure.

The practice of allocating F&A costs in concert with the expenditures related to a grant is efficient and assures that F&A is received in amounts that coordinate with the amount of directly funded research. This method, however, gives the incorrect perception that those funds “belong” to a particular grant, when in actuality they are not intended to have anything to do with the direct funding of the award. In Australia, for example, the indirect costs are awarded in parallel with the bottom line total of direct costs from an agency to the university, hence avoiding the perception (8). It is less complex to do this in Australia, however, because the largest proportion of the research funding comes from the government.

F&A Rate Determination

The F&A rate is calculated by a university and then negotiated with its cognizant agency (e.g., the Department of Health & Human Services) to reach a final number. The determination is based on audited data collected by the university in each of several cost pools or categories of support for the research enterprise (Table 2). The guidelines for allocating this funding in concert with grant awards was codified in US Office of Management and Budget OMB Circular A21 in 1958 as the first step in the development of the “principles . . . designed to provide that the Federal Government bears its fair share of the total costs” of federally funded research (7).

In 1991, the administrative component of the F&A rate was capped at 26% for universities only. Now, more than 20 years later, the 26% remains as a cap even though virtually every

research university can easily document the real cost of administration at a significantly higher level.

Using data in these cost pools, each university negotiates (typically) a 4-year rate that is calculated by dividing the actual indirect costs to the institution by the modified total direct costs (MTDCs) of the research activity. The rate may escalate slightly during the 4-year period.

F&A rate determination:

$$\frac{\text{Research F\&A costs}}{\text{MTDC research}} = \text{F\&A rate}$$

It is important to recognize that the negotiated rate is routinely less than the fully burdened rate calculated by the university when it submits an F&A proposal to the cognizant agency (Table 3).

It is also useful to point out that the determination of the F&A rate in and of itself is a costly process, often involving the use of external consultants.

The amount of F&A reimbursed on a grant depends entirely on the nature of the direct charges because of the concept of MTDC introduced in OMB Circular A21 in 1979 (7). MTDC is equal to total direct cost minus the cost of equipment, buildings, patient care, off-campus building rental, training stipends, tuition, and the portion of each subcontract in excess of $25,000. For most grants, MTDC equals direct costs minus equipment costs (7).

It is also widely recognized that the federal rate does not apply to all federal awards (e.g., exceptions are made by agencies such as the Department of Agriculture and the Department of Education), and certain grants, even from agencies like the NIH, have reduced rates depending on the nature of the activity covered (e.g., construction grants and training grants).

The federal rate is also infrequently adhered to when accepting support from other sources, not because of a university's policies or actions, but because of the policies related to payment of indirect costs by the funding source. State agencies, for example, may fund at a capped rate—often 5% or 10% at best—and many private foundations have policies that state they do not pay indirect costs at all. Any time a university accepts an award that has either waived or lowered F&A, the difference between the full cost of F&A and that received is a financial cost to the department or college. This cost can be included in NSF research expenditures reporting as it is a real cost to the institution. It has been estimated that the combined universities' subsidy of F&A costs related to all federal and nonfederal programs exceeds $2.3 billion annually (2). Moreover, the effort to administer a grant centrally and through the colleges and departments may be as great for awards that carry minimal or no F&A as it is for those with the full percentage rate, and a university must provide research administrative personnel centrally and in departments and colleges to manage them (at their cost). Some universities, however, charge private industry their real cost of research infrastructure that is a rate greater than the federally modified F&A rate.

A significant consequence of accepting a large number of awards with low F&A rates of reimbursement is that the effective F&A rate for universities is nowhere close to their federally negotiated rate. The effective rate for top research universities nationally is in the range of 20–25% of awards (2).

Even when the federal rate is applied, the amount is inadequate to cover a university's real costs. When a university is successful in research and increasing in success on an annual basis, there is a significant and growing infrastructure that needs to be available and funded. And, as faculty become more successful, they require, and perhaps demand—and deservedly so—better support and resources. It becomes immediately apparent that F&A at the negotiated rates will not come close to funding a university's research enterprise.

F&A and Unmet Expectations

Success in the academy's mission, especially the research mission, engenders pride, satisfaction, collegiality, enthusiasm, and high morale, but success can also create *tension* because faculty who have created this success are empowered for themselves and for others to become even more successful. They do so by developing larger, more complex relationships and programs that are resource intensive (space and personnel), creating an even greater need for more resources to sustain this success and to capitalize upon it. They should be celebrated and rewarded, but when neither is evident to them, faculty become dissatisfied and look elsewhere, thus threatening the continuation of the success they have achieved for themselves and their institutions. The potential turnover of faculty represents another high cost to a university. Keeping existing, proven talent must be as great a priority as recruiting new faculty—perhaps even more so.

Colleges and departments also express frustration when the distributed F&A they have counted on is available at a diminished level. The amount and the nature of their needs will vary with the college and department, but these funds are essential for start-up for new faculty, administrative support, subsidy of core facilities, and support for graduate students. There is generally an insufficient amount of money relative to the size of the research portfolio to pay for central services, college and department services, and other research support (e.g., center and shared equipment) and then to distribute some percentage to faculty principal investigators who rely on indirect dollars for research support that is not included in direct funds and to protect the viability of their programs in times of interrupted funding. Faculty, then, are also frustrated when the distributions they have counted on are diminished. Surveys of universities across the nation reveal various policies for using and distributing F&A and are cited to university administration by individuals who want to make a case for increasing or retaining the status quo on distributing F&A dollars to faculty, departments, and colleges.

A presentation at the National Council of University Research Administrators (NCURA) in 2010 (1) on the distribution of F&A suggested that faculty think of F&A as either a tax or a gift and that most of the top 100 research universities keep the money centrally for support of centers and institutes, bridge funding for investigators, seed funding for innovative projects, infrastructure for sponsored projects, and faculty travel. There are multitudes of

distribution patterns for F&A, including schools where the lion's share of the funds is held by the provost.

Although it is relatively easy to find schools that distribute rather substantial levels of F&A funding to academic units and investigators, a direct comparison between these universities and others is valid only if it is understood how much other support a university provides to underpin its research administration.

For the State University System (SUS) universities in Florida, F&A is designated by statute to support the central research administration as its first priority and, therefore, little educational and general (E&G) funding from the state is applied to the broader needs of the research mission. The State of Florida defines, through statute, that all F&A reimbursed to an institution will be used, first, "to fund the cost of operating the Division of Sponsored Research" (generalized to mean centralized research support). Funds that remain in excess of costs shall be used to support other research or sponsored training programs. Compliance with this directed use is audited from time to time and has resulted in fines to some institutions for misuse of these funds.

The F&A recovered from sponsored research is only a minor portion of a university's investment in research however, thus adding further to fiscal tensions in a resource-constrained environment.

University Subsidy of Research

The need to support the research enterprise from multiple sources within a university is characteristic of research universities both here and abroad. NSF data over the last 50 years (1956–2006) demonstrate that the level of investment by universities increased 58% over that period (Table 4).

The same situation exists abroad. A study conducted for the national research universities of Australia, for example, was directed toward discovery of the real costs of research and what can and should be considered direct and indirect costs. The conclusion from this study was that universities need to invest 40 cents on each dollar of funded research to support the projects.

University Investment in the Broad Domain of Research: Categories of Support

Within research universities in the US, it is clear that when faculty are successful in research, the university digs deeper to provide the support that is needed. A study was conducted at the University of Rochester School of Medicine and Dentistry in which a cohort of 25 newly recruited faculty members was followed (1999–2004) to determine the cost to the university's endowment, philanthropy, royalty revenue, and internal fund transfers to establish these individuals to the point where they were bringing in external funds on their own (10). Few variables were evaluated (compared with what is actually required for support activities) and the cohort was all within one college. Nonetheless, the findings demonstrated that 40 cents was spent from university funds for each one dollar of external funding received, the same 40% ratio that was generated by the Allen Consulting study of Australian Universities (8). Thinking broadly, the outline found in Appendix A was

developed to portray a more expansive picture of support that is required for a university's research environment. Such an outline may help universities determine whether there is value in putting numbers to these categories for at least a few pilot examples to obtain a more accurate picture of their own investments in research.

Roles and Responsibilities of the Central Research Administration

At the University of South Florida (USF), as an example, there are seven core administrative units that are overseen by the senior vice president for research and innovation and employ approximately 225 individuals: Sponsored Research, Research Integrity and Compliance, Comparative Medicine, Technology Transfer/Patents and Licensing, the Research Foundation (which includes the Research Park and business incubator), Research Administration Education, and Research Financial Management. About 50% of the budget funds the central operations. The balance supports institutional commitments related to research. The growth of central operations has expanded significantly to meet the demands of faculty success and continually expanding responsibilities for training, reporting, and managing research that have been imposed by the federal government. The new responsibilities are essentially unfunded mandates, as no additional resources are made available via F&A (other than the annual increase in a university's F&A rate based on increasing expenditures) to accomplish them, but the university is held accountable for these mandates and not to do so would result in audit findings and the risk of fines to the institution.

The activities of a central research office extend well beyond research grant management. The office plays a role in multiple university activities that include (1) faculty development and recognition, (2) institutional vision and balance, (3) resource acquisition and management, (4) institutional policy development, (5) marketing the university—communicating institutional status and building the university's reputation, (6) setting institutional priorities and strategic planning, (7) building connections internally and building university relationships externally, (8) business and economic development, (9) institutional innovation and entrepreneurship, (10) public service, outreach, and economic development, (11) strategic institutional investment for institutional gain, and (12) institutional accountability, performance, and productivity.

These responsibilities require a central research office to be cognizant of the current issues in higher education that impact the university research environment, issues besides money that are important to operations. These issues include more accountability for time, money, and activities; more emphasis on teaching and preparation of undergraduate students; greater demand for self-support; multiple roles played by the faculty and staff; a flatter, less hierarchical administration; more decentralization that can promote "boundaries"; greater emphasis on entrepreneurship; the development of strategic partnerships within and without the academy; more emphasis on global connections; and a greater need for strategic thinking and planning.

All of these points suggest that strategies for managing and enhancing the university research environment should be guided by a series of "musts." The university must (1) keep on top of the changing federal, state, and local fiscal environments, especially as they impact

strategic research priorities; (2) assess and be knowledgeable of institutional strengths and culture; (3) understand the level of resources available and match/focus programs accordingly; (4) look for opportunity inside and outside the institution; (5) be certain the institution is “known” as widely as possible; (6) invest in projects to provide opportunity; and (7) provide incentives and rewards to modify behavior. The university must also create an administrative structure that capitalizes on all potential avenues of support, diversifies the management of funds from different sources for different purposes, manages relationships, adopts new models for interaction, and seizes as well as creates opportunity.

A university’s challenge is to reduce costs where there are unnecessary duplicate activities, to generate more revenue to support research (primarily by increasing the effective F&A rate), and to expand services to support faculty research. This article is a brief scan that does not even begin to take into account the many unique kinds of support characteristic of individual universities, colleges, and departments, but it is a start that is intended to stimulate thinking more deeply about an institution’s investment in research.

Acknowledgments

Holbrook formerly served as senior vice president for research, innovation, and global affairs at the University of South Florida. Sanberg is currently senior vice president for research and innovation at the University of South Florida and president of the National Academy of Inventors.

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APPENDIX A

University Investment in Research: Categories of Support

I. Personnel

- **A.** Costs for faculty searches
- **B.** Start-up costs for faculty
  1. Junior faculty—financial resources and lab renovation; equipment, research personnel, and graduate assistants
  2. Senior faculty—often recruited in cohorts, require tailor-made laboratories necessitating renovation/ construction. Those hired at positions such as chairs or center directors may require an investment at the multimillion dollar level.
     - **a.** Access to significant equipment—may be institutional
     - **b.** Signing bonuses—inducements are often needed as well as other special benefits
- **C.** Support personnel—research offices, business and finance, auditing, college and personnel who work with college and departmental research administration. These individuals are not always easily identified; however, they might be identifiable as a research administrator if they:
  1. Search for funding opportunities for faculty in the department
  2. Assist faculty with the preparation of budgets and the submission of research proposals
  3. Process research forms (grant budget release, internal forms)
  4. Help faculty set up awards/subawards/contracts
  5. Process salaries (pay distribution, retroactive payroll expenditure transfers, remaining spending authority checks)
  6. Charges to project IDs (purchase orders, equipment, supplies)
  7. Process travel forms that are charged to projects
  8. Assist faculty with Federal Effort Reporting via a personal effort reporting tool
  9. Personnel with corporate liaison/business and economic development connections can also be counted among those supporting research

10. Graduate assistants, postdoctoral fellows; tuition waivers, and health insurance may be required for various categories of students

II. Capital infrastructure and utilities

- **A.** Facilities, utilities, and equipment upkeep
- **B.** New buildings, renovation, and modernization: costs of upgrading out-of-date buildings
    1. Institutional architects
    2. External architects
    3. Master planners
- **C.** Animals and animal housing
- **D.** Libraries—hard copy and electronic media
    1. Considered by many to be equivalent to a utility
    2. At USF, it is estimated that 60% of the library budget directly supports research
    3. Electronic journals are not a cost-cutting or saving mechanism
- **E.** Research parks and incubators
- **F.** Off-campus research facilities, such as marine labs, and others
- **G.** Performance halls and recital rooms
- **H.** Museums and galleries

III. Technology—rapid updating needs and continuous investment

- **A.** Equivalent to a utility but hard to estimate total cost because of centralized and decentralized activities and support
- **B.** Can account for a significant percentage of a university's operating budget annually (at USF, up to 10%)
- **C.** Central computing requires a cost for space
- **D.** New computational intensive disciplines require more extensive computing resources, for example, genomics, proteomics, bioinformatics
- **E.** Back-up systems for mission critical functions and university records
- **F.** Internet II and National Lambda Rail, and so on, costs

IV. Scientific equipment—escalating sophistication and costs; shortened life span with rapid updating needs; costly service contracts. Other specialized "equipment" such as research vessels can be included.

V. Scientific research itself—as new fields of research have opened (e.g., nanotechnology), new requirements for ethical considerations have emerged, leading to new requirements; see also new fields connected with enhanced technology.

VI. Core laboratories—rarely sustained financially as cost centers; need to be subsidized. Compliance with federal, state, and university regulations; continually increasing compliance requirements

- **A.** Institutional Animal Care and Use Committee (IACUC)
- **B.** Institutional Review Board (IRB)
- **C.** Cost accounting standards
- **D.** Conflict of interest
- **E.** Environmental health and safety
- **F.** . . . and the cost that is incurred when an institution is NOT compliant (fines)

VII. Safety and security

- **A.** Added safety required for certain science buildings on campus, for example, BSL-3 (biosafety level-3) buildings and the use of select agents and animal facilities
- **B.** B. Infrastructure requirements such as safety readers on doors, surveillance cameras on loading docks, motion detectors, 24-hour guards
- **C.** Chemical tracking systems
- **D.** Personal and occupational health and safety

VIII. Grant matching requirements and cost sharing—it is important to recognize that matching and cost-sharing tactics (even though often required) may have a negative impact on a university in that they create a reduction to the F&A rate to the university. The amount of cost sharing reduces the recovery of F&A and the calculated rate

IX. Unfunded or underfunded indirect costs—subsidies from a university are required due to the following arguments by:

- **A.** State agencies—“we have already paid” (them)
- **B.** Private foundations—“we can’t (or won’t) pay” (them)
- **C.** Industry research and clinical trials—“we won’t be competitive” (us)

X. Business ventures

- **A.** Incubators and research parks
- **B.** Economic development activities
- **C.** Technology transfer offices

XI. Internationalization/globalization of the campus

- **A.** Requires stringent adherence to export control requirements
- **B.** Office to support international travel health and safety
- **C.** Financial management

XII. Continually increasing reporting requirements

- **A.** ARRA reporting
- **B.** Responsible Conduct of Research (RCR) training
- **C.** Other

XIII. Partnerships, collaboration, and interdisciplinary projects

XIV. Faculty development, travel, and incentives

XV. Special research enhancement programs

XVI. Organization memberships

- **A.** Association of Public and Land-grant Universities (APLU)
- **B.** American Council on Education (ACE)
- **C.** Council on Competitiveness
- **D.** Oak Ridge Associated Universities (ORAU)
- **E.** Southeastern Universities Research Association (SURA)
- **F.** Universities Research Association, Inc. (URA)
- **G.** State Research Consortiums
- **H.** Council on Governmental Relations (COGR)
- **I.** Research!America
- **J.** National Collegiate Inventors and Innovators Alliance
- **K.** The Science Coalition
- **L.** National Academy of Inventors (NAI)
- **M.** Other

XVII. Status” costs

- **A.** Association of Research (ARL) libraries
- **B.** Association of American Universities (AAU) membership

XVIII. Clinical trials/clinical research (clinical trial F&A revenue is typically capped at 25% of total costs; some institutions have not attained even that level in negotiating for contracts)

- **A.** Special offices

- **B.** Special infrastructure
- **C.** Special protection
- **D.** Special personnel
- **E.** Special training

XIX. Consultants

- **A.** Space planning
- **B.** Business planning
- **C.** Building planning
- **D.** IT planning
- **E.** F&A negotiations
- **F.** External assessment of operations
- **G.** Assistance in developing new endeavors
- **H.** Other

XX. General counsel and special research-trained attorneys (in addition to external counsel hired to support patents and licensing activities)

XXI. Audits—significant costs are associated with audits in terms of internal and externally hired auditors

- **A.** Internal auditing is often a cost partially assessed to the central research office
- **B.** Audits themselves are costly ventures in terms of personnel time and occasionally special negotiators, especially when federal auditors visit the research enterprise
- **C.** Auditing as required by the federal government for research-related activities has become extremely burdensome
- **D.** External auditors—required by direct support organizations and other academic units

XXII. Marketing, public relations, and lobbying

- **A.** University, local and national PR—all media
- **B.** Lobbyists at the state and federal levels
- **C.** Public records requests

XXIII. Having “bad actors”

- **A.** Managing scientific misconduct—inquiries and investigators into allegations of scientific misconduct are costly and, in the situation of a major case, the cost has reached into the millions (3)

B. B. Failed business investments and transactions—especially in the technology transfer arena, but in other areas as well

C. Other legal issues related to the research enterprise

D. Fines for noncompliance with federal regulations, for example, effort reporting

Table 1

Direct Costs

Salaries, wages and fringe benefits
Materials and supplies
Participant costs
Meeting costs
Services
Travel
Equipment*
Alterations and renovation*
Patient care*
Space leasing*
Utilities*
Scholarships, fellowships, stipends, and tuition*
Subcontracts†

*All items are excluded from the F&A calculations (see the text).

†Only the first $25,000 of each subcontract is included in the F&A calculations.

Table 2

Components (Cost Pools) of the Federally Negotiated F&A Rate (9)

Facilities	
1	Buildings and improvements—depreciation on buildings (e.g., foundation, roof, etc., and the cost of improvements to land, lighting, sidewalks, and landscaping) not funded from federal dollars; off-campus rentals that are not charged to federal grants
2	Equipment—depreciation on major equipment that is not purchased by federal funds and is located in space where there is research activity supported by federal awards
3	Interest on debt on buildings and capital improvements
4	Operations and maintenance—includes custodial, environmental health and safety, security and transportation
5	Library—recoverable operating costs including book acquisitions, periodicals, and so forth
Administration	
1	General administration—general executive and administrative offices, for example, offices of the president and provost, personnel, payroll, purchasing, financial management
2	Departmental administration—nonfaculty and nonprofessional technical and administrative staff, supplies, phone, travel
3	Sponsored projects administration
4	Student services administration (while listed as a component, charges are not allocated, as all student service administration is allocated to instruction)

Table 3

F&A Rate (1)

Institution	Calculated Rate (%)	Negotiated Rate (%)
University of South Florida	54.05	49.5*
UT San Antonio	75.4	44.5
University of Washington	64.4	56
UC Davis	71.2	52

* 2013 data.

Table 4

University Contribution to the Research Enterprise (6)

Fiscal Year	All R&D Expenditures (%)	Federal Government (%)	State and Local Government (%)	Industry (%)	Institutional Funds (%)	All Other (%)
1956	100	57.3	14.2	7.8	11.6	9.1
1966	100	73.5	9.1	2.4	8.6	6.3
1976	100	67.4	9.8	3.3	12.0	7.6
1986	100	61.4	8.4	6.4	17.1	6.7
1996	100	60.1	7.9	7.0	18.1	7.0
2006	100	62.9	6.3	5.1	19.0	6.7