

Appropriate Means of Allocating Costs for Instruction -- or -- What Do Student Fees Actually Pay For at a Research University?

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References: <http://socrates.berkeley.edu/~schwartz>

ABSTRACT

A longstanding business practice at universities and colleges hides the cost of faculty research under the accounting category of "Instruction." This is especially misleading for research universities in their communications with students, legislators and the general public about financial matters. A proper cost analysis for the University of California shows that undergraduate student fees here are now at 100% of what the institution actually spends, averaged per-student, for that mission. This result contradicts the official claim that student fees cover only 30% of the cost of their education. Estimates of this discrepancy are also provided for some other research universities, both public and private. This has broad implications for public policy regarding higher education.

Statements by Research Universities about Their Costs and Tuition Rates

Average Expenditure for Education is \$17,390 per student (2007-08); Student Fees, net of financial aid, cover 30% of this.

-- *University of California*

The money the university collects from tuition (\$34,800 in 2007-08) covers only about 60% of the costs of educating an undergraduate.

-- *Stanford University*

Tuition and fees will increase to \$36,390 (in 2008-09); however, this figure represents less than half of what it costs MIT to educate an undergraduate.

-- *Massachusetts Institute of Technology*

QUESTION: How truthful are these statements?

Lets look at some official data.

UC Operating Expenses by Function (2006-07)

<u>Uniform Classification Category</u>	<u>Expenditure</u>
	\$ Millions
Instruction	3,520
Research	3,157
Public Service	421
Academic Support	1,188
Medical Centers	4,086
Student Services	500
Institutional Support	858
Operation & Maintenance of Plant	476
Student Financial Aid	407
Auxiliary Enterprises	807
Depreciation & Amortization	1,049

Source: University of California Annual Financial Report

One should ask, what does this data mean?

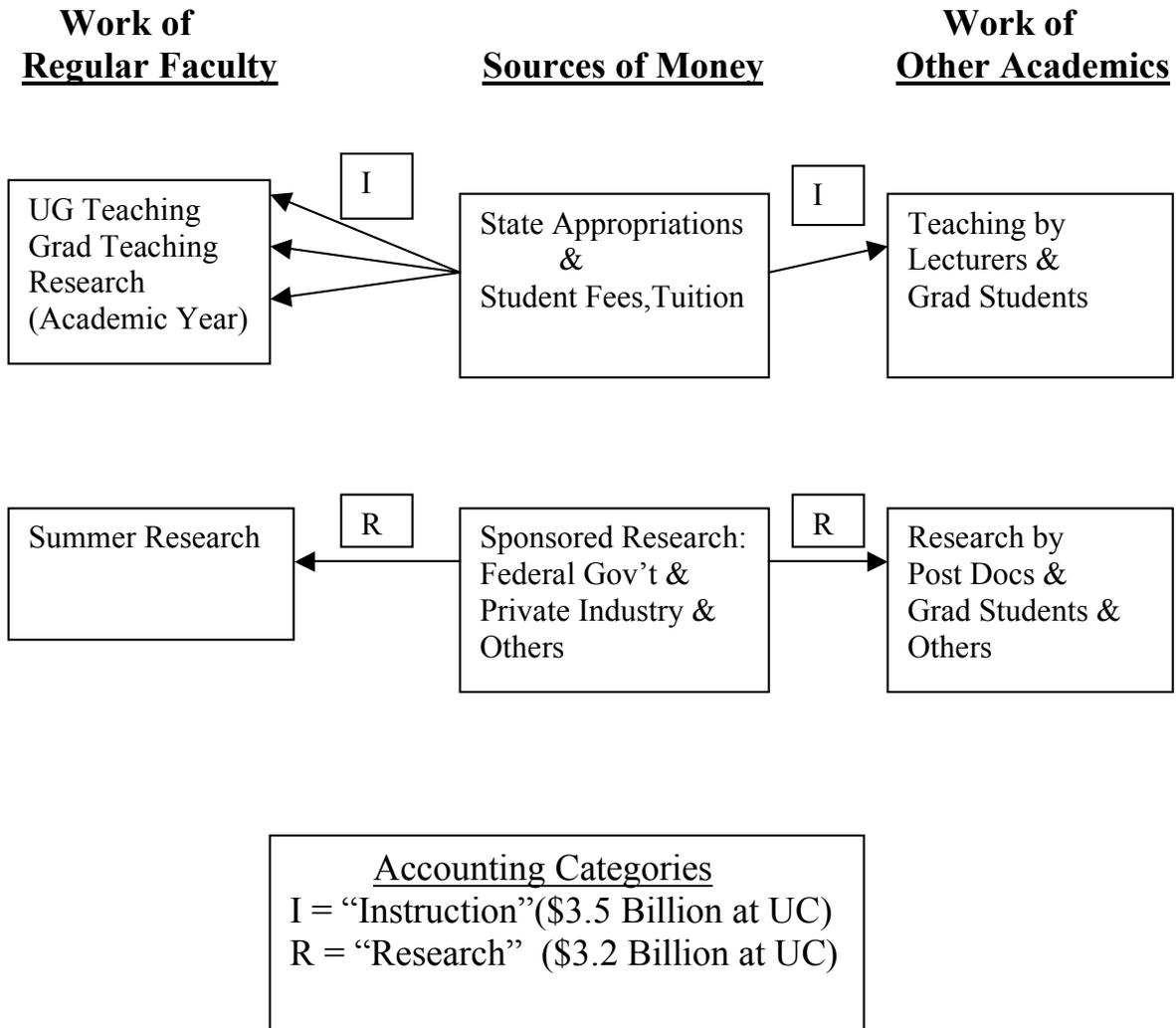
UC has a three-fold mission: *Teaching, Research, and Public Service*. Does this accounting accurately show the spending for each of those? NO See:

<http://socrates.berkeley.edu/~schwartz/SideBar1.html>

Their “Average Expenditure for Education” is:

General Campus parts of (Instruction + Libraries + Student Services + Overhead) ÷ Number of Students

Basic Financial Picture of the Research University



On top of the Primary Activities:
 Instruction, Research, Public Service

One also has expenditures for Supporting Activities:
 Academic Support (Libraries, etc.)
 Medical Centers
 Student Services

As well as Overhead Expenses:
 Institutional Support (high level administration)
 Operation & Maintenance of Plant

What is the definition of the accounting category that records expenditures for INSTRUCTION?

University of California Accounting Manual, Section U-751-17
UNIFORM ACCOUNTING STRUCTURE

I. INTRODUCTION

The University maintains its accounting records in accordance with the Uniform Accounting Structure (UAS) system prescribed by the National Association of College and University Business Officer (NACUBO)

...

A. INSTRUCTION--40XXXX

This category includes expenditures for most activities that are part of an institution's instruction program, including expenditures [for] the following:

- Subject A;
- Academic, occupational and vocational instruction (credit or noncredit courses), for regular, special, or extension sessions;
- Departmental research and public service that are not separately budgeted;
and
- Expenditures for department chairpersons who are also instructors.
[Emphasis added]

-- QUESTIONS --

- Q1: What is Departmental Research?
- Q2: Why is it counted as an expense for Instruction?
- Q3: Since the cost of undergraduate education, as stated by research universities, is really the cost of a bundle of core academic functions, as in the picture above, can one objectively disaggregate the cost of Undergraduate Instruction from that bundle?

Q1: What is “Departmental Research”?
and

Q2: Why is it Counted as an Expense for Instruction?

First, a discussion familiar to most faculty members.

If I am a full-time professor at a research university, I am paid an academic year salary to cover all of my professional work: teaching, research, university and public service. All of that payment is recorded by the university as an expense for “Instruction.” If I have an external research contract or grant, I supervise the postdocs and graduate students hired with that money, but do not take any salary from there for my research work during the academic year. All of that payment, along with any summer salary I may take from the research grant, is recorded by the university as an expense for “Research.”

As far as I am concerned, all that research work I do is the same activity, winter, spring, summer or fall. Only the financial accounting of it is strangely bent. See the previous picture.

Trying to understand this awkward situation, let me talk about a related financial game, the I&R budget. When the administration of a public research university goes to the state legislature seeking appropriations for the coming year they present a package, called the Instruction & Research (I&R) budget. This is to cover the full salaries and benefits for all the professors (doing teaching and research and service) along with the support staff and supplies they need in the academic departments, plus appropriate overhead expenses for libraries, administration and facilities maintenance.

Why this bundling? We all know. It is because ...
[See Appendix “Old and New Thinking ...”]

Second, a look at the history of accounting practices.

Going back to NACUBO's Third Edition (1974) of "College and University Business Administration," we find the same definition as currently used for the "Instruction" category of Expenditures:

"Expenditures for departmental research and public service that are not separately budgeted should be included in this classification." (page 188)

Going further back, to the 1935 volume on "Financial Reports for Colleges and Universities," compiled by The National Committee on Standard Reports for Institutions of Higher Education, we find (on page 45) the same specification, although the phrase "departmental research" is absent.

"Amounts reported under this heading ["Instruction"] should include any expenses for research which are not separately budgeted and accounted for."

Finally, there is the 1930 book, "University and College Accounting" by Lloyd Morey, Comptroller of the University of Illinois and Chair of the National Committee mentioned above. Morey says (page 172) that it is necessary to determine, as accurately as possible, the distribution of work time of members of the staff and faculty; and he shows report forms used for that purpose. Here is what he then says (page 182) about the overlap of research and instruction.

"It is undoubtedly of advantage to determine in financial terms as accurately as possible the total amount of effort being devoted to research in an institution and the actual net expense of instruction after allowing for this research. However, in view of the fact that some of this scientific work is specially organized and financed while the remainder stands in effect as a part of the instructional budget, it is well to determine also the expense of instruction including the research incidental to it, and excluding only that work which is separately budgeted, together with its share of general overhead."

---- Isn't that totally self-contradicting? (Accounting vs. Budgeting)

But even the hint of respectable cost accounting seems to have gotten lost in later practice and standards set by NACUBO. Their most recent study on this specific question is their 2002 report, “Explaining College Costs – NACUBO’s Methodology for Identifying the Costs of Delivering Undergraduate Education,” which may be found at <http://www.nacubo.org/x376.xml> They say (page 27):

“Departmental Research. Several alternative proposals were considered, but NACUBO concluded that all departmental research costs should remain within instruction and student services. Departmental research is vital and has a direct impact on the value and quality of instruction provided to students.”

One may concede that faculty research does make some contribution to undergraduate instruction; but to put *all* of that cost onto the undergraduate students is, IMHO, nothing short of a fraud. Yet, this is the accepted standard of cost accounting at the nation’s research universities.

Q3: Can one objectively disaggregate the cost of Undergraduate Instruction from that bundle? YES.

UC Faculty Time-Use Study of 1984

Regular faculty members (100% I&R FTEs) spent an average of 61.3 hours a week on University-related activities of all kinds. The main breakdown is:

26.0 hours on instructional activities;
23.2 hours on research/creative activities;
6.6 hours on university service;
5.5 hours on professional activities/public service.

The survey also collected data on how much of the “research” and “service” time also contributed to “instruction”.

The survey also found the division of faculty instructional time between undergraduate and graduate courses (50-50).

Conclusion: UC faculty spend, on average, 21% of their University work time contributing to undergraduate education.

This is the key data for “Activity Based Costing.”

Disaggregating the Expenditure for Undergraduate Education at the University of California (2006-07)

Instruction: Gross = \$3,570 Million; subtract Professional Schools, Extension: Net = \$1,656 Million.

Undergraduate part = \$193 Million for Lecturers and Graduate Student Instructors + 21% of the remainder (for Professors and departmental support) → \$492 Million.

Academic Support: Gross = \$1,188 Million; subtract Medical and Research parts: Net = \$512 Million.

Undergraduate Part = 1/2 of Library and Computer Support + 1/4 of Academic Administration → \$209 Million.

Student Services: Gross = \$500 Million; subtract health insurance (paid for by other fees) \$120 Million. → \$380 Million.

Direct & Support Expenses: Sum of above = \$1,081 Million; Add 12% for Overhead (*Institutional Support + Operation and Maintenance*) plus \$93 Million estimated for capital depreciation. → Total UC cost for undergraduate education = \$1,304 Million.

Divide this by FTE Enrollment: → **\$7,311 per student**

Compare: UC says (for 2007-08) it is \$17,390.

CPEC says (for 2005-06) it is:

University of California	\$18,203
California State University	\$11,624
California Community Colleges	\$5,461

See further discussion:

<http://socrates.berkeley.edu/~schwartz/SideBar2.html>

Can this calculation be done for other Research Universities ?

Here is a simple model to extrapolate the UC results. For any comparable school, their cost depends on the number of faculty (F) and the number of students (S)

$$C \text{ (cost of UG Education)} = a F + b S$$

I say that at schools that compete for research faculty, their salaries, support and teaching loads will be roughly the same. So the cost-per-faculty (the constant a) will be the same as for UC. (a = \$71,000.)

The cost-per-student (the constant b) is partly attributed to libraries, etc., which I take from the UC calculation, and partly due to Student Services. The latter may vary greatly from one school to another, but that data is available from IPEDS.

Estimated Actual Cost-per-Student for Undergraduate Education (04-05)

	b (\$)	R=S/F ratio	Cost-per-Student	Tuition & Fees
U. California	2,913	18	\$7,000	\$7,000
Harvard U.	7,801	7.0	\$18,000	\$32,000
M.I.T.	5,874	3.5 (?)	\$26,000	\$32,000
Stanford U.	5,394	6.4	\$16,000	\$31,000
Yale U.	7,801	6.6	\$19,000	\$31,000
U. Illinois	2,166	14	\$7,000	\$9,000
U. Michigan	2,347	15	\$7,000	\$9,000
SUNY-Buffalo	1,676	17	\$6,000	\$5,000
U. Virginia	1,801	15	\$7,000	\$7,000

Conclusions and Discussion of Public Policy Implications

We are caught in a long habit of disinformation. What to do?

- We should clean this up because it is the honest thing to do and it will advance our policy of transparency and public accountability.

-- or --

- We should maintain the old line because to do otherwise would jeopardize our ability (funding) to do research.

- What about the stated University priorities of Quality, Access and Affordability? Here we see a sharp conflict among these priorities.

- Consider what the official claim “Student Fees cover only 30% of the Cost of Education” says to state officials who are facing tough budget choices. Doesn’t it invite them to cut the University budget and pass more of the cost on to students?

UC, and other public universities, are on the path of Privatization. How far and how fast is the main question today. This calculation tells us something important about how far we have come:

The State Subsidy for Undergraduate Education has Vanished.

With undergraduate fees now at 100% of what their education actually costs us, we are right now at the border of passing into the financial world of the private universities, which have always used undergraduate tuition to subsidize faculty research.

What will be lost, and who will suffer, if we cross that divide?

APPENDICES

March 11, 2006

John L. Hennessy, President
Stanford University
president@stanford.edu
Dear President Hennessy;

An official statement from Stanford University, published February 15, 2006, reports that undergraduate tuition for next year will be set at \$32,994 (this does not include room and board). We then read, "It is important to note that the money the university collects from tuition covers only about 60 percent of the costs of educating an undergraduate." This grossly misstates the truth about university financing since the commonly used method of calculating "cost of education" at our research universities bundles together the costs of undergraduate education plus graduate education plus faculty (departmental) research.

Using a variety of official data available for the University of California, I have been able to disaggregate the cost of undergraduate education here and I conclude that student fees at UC (now just under \$7,000 per student) amount to 100% of the actual average expenditure on undergraduate education. I have also been able to extend this analysis (approximately) to other leading research universities; and I estimate that at Stanford University the actual expenditure for undergraduate education is about \$16,000 per student per year. (See my papers posted at <http://socrates.berkeley.edu/~schwartz>)

Thus, a truthful explanation of the tuition level at Stanford University would be something like the following.

While the actual expenditure directed to undergraduate education at Stanford is only about half of that tuition (\$32,994 per student per year), it is important to recognize the importance of the other half, which is mostly spent in support of the university faculty's research endeavors and related graduate programs. The research accomplishments of our faculty are of great significance to the whole of society and are responsible for the outstanding international reputation of Stanford University. That reputation adds greatly to the value of any diploma Stanford awards to its students; and we believe this justifies the added cost which we pass on as tuition.

I would be greatly interested in your reaction to this.

Sincerely,

Charles Schwartz
Professor Emeritus of Physics
UC Berkeley
(and, long ago, a junior faculty member at Stanford)

Old and New Thinking about Financing the Research University

Every professor at a research university, like my own University of California (UC), knows why we are here. We are good at research; we love doing research; we are hired and promoted by the university because of our research abilities and accomplishments; we gain the respect of our peers through our research work. And we believe that our research work is valuable to all of human society.

We also have a belief that other people – the general public and their elected representatives in government – do not appreciate our research very much. They are mostly concerned with the education of undergraduate students (their kids), something that our excellent university also provides.

We are happy with the bargain: we will provide a first rate undergraduate education that they want and they will provide the support we need to carry on our research and the closely related graduate education programs.

Sometime, long ago, this bargain was sealed in the budget arrangement that was worked out between university administrators and the state government. It is called the I&R budget. I&R stands for Instruction and Research. It covers the entire academic year salaries of the faculty and supporting staff in the departments; and along with this comes the necessary institutional infrastructure and overhead. It is one big bundle of appropriation, which allows us to carry out the undergraduate education and the graduate education and the faculty members' own research activities throughout the academic year.

It is common to take that whole bundle of expenditures, divide it by the number of students we enroll, and call that the Average Cost of Education – so many dollars per student per year. For example, the official pronouncement at UC is that the Average Cost of Education is about \$17,000 per student and student fees cover only about 30% of that cost.

If you detect a slight lack of candor in that arrangement, it could easily be excused by saying that no harm is done: teaching and research are both “public goods” and they are both paid for by public money; how that money gets divided between those two missions is not worth fussing about. That is The Old Thinking.

Something changed in the early 1990s. A severe state budget crunch led to the introduction of tuition charges at our public universities. Called “student fees” they were specifically intended to supplement the basic I&R budget when state funding was cut. These student fees have been rising a lot more in recent years.

A new rationale was adopted for this major change in financing for our public universities. It goes like this: Since students attending the university would go on to better paying careers, this higher education provides a “private good” and they, the students, should pay for it, at least in part, rather than passing the entire cost on to the taxpaying public. That is The New Thinking.

This new rationale and the new reality of the rising cost to university students and their families ought to require that we reassess The Old Thinking. This is challenging.

First, there is the matter of telling the truth about which money pays for what. If undergraduate education is now seen as a private good, then it ought to be separated out of that big bundle, the I&R budget. The research mission of the university is certainly important as a public good; and it would seem quite improper to blithely pass on some of that cost to undergraduate students.

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