

## In this Issue . . .

Featured article.....	pg. 1
“Do Academic Research Costs Drive up Undergraduate Tuition?”	
Featured Researcher.....	pg. 2
Save the Date.....	pg. 2
Quotable Quotes.....	pg. 3
HPD Research Approvals.....	pg. 3
Research Office Contact Info.....	pg. 3



Volume 1 #8 February 2008

# Do Academic Research Costs Drive up Undergraduate Tuition?

## Results in Brief

Increases in tuition and fees charged by the Nation's colleges and universities from 1980-94 averaged 225 percent and were virtually identical for all types of public and private institutions, from those with heavy involvement in research to those with little or none. This suggests that tuition increases result from common underlying dynamics, which affect all of higher education, rather than from the presence or absence of organized research activity in some types of institutions. However, universities do report paying for about one-fifth of their total research expenditures with funds from their unrestricted accounts, which include tuition. Thus, some subsidy by undergraduate tuition for research over the period is consistent with the data presented here.

**Tuition increases reflect common dynamics affecting all types of higher education institutions, rather than the presence or absence of research in some of them.**

Increases in tuition and fees charged by the Nation's universities and colleges have been steeper than the rise in median household income and the Consumer Price Index: 225 percent from 1980-94, vs. 82 percent and 74 percent, respectively.<sup>[1]</sup> This has given rise to suggestions that revenue from undergraduate tuition is used to subsidize activities—research among them<sup>[2]</sup>—not directly related to undergraduate instruction. The link to research reflects the fact that some costs incurred in the conduct of research supported by Federal *grants* (e.g., cost overruns, charges for use of laboratory space originally constructed with Federal funds) cannot be reimbursed under OMB rules, and that Federal agencies may require some university cost sharing as a prerequisite for making an award.

To provide an assessment of the view that research costs are driving up undergraduate tuition, 1980-94 financial statistics of 1,339 universities and four-year colleges<sup>[3]</sup> were examined, grouped by public and private control and Carnegie type.<sup>[4]</sup> This allowed the comparison of tuition increases for higher education institutions with differing levels of research activity—extensive to little to none—and differing governance structures.

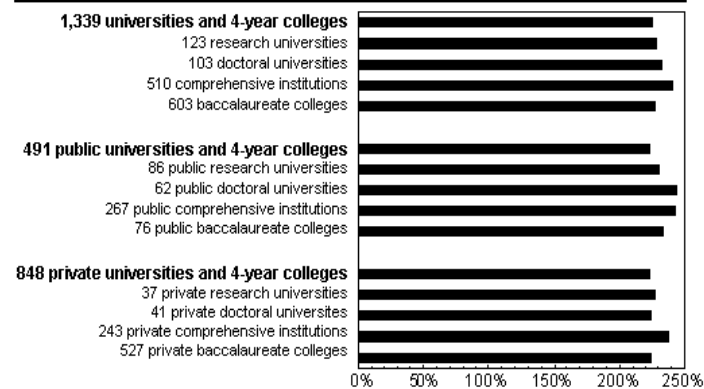
## Do research costs drive up tuition charges?

Over the 1980-94 period, tuition and fees increases for the 1,339 four-year colleges and universities were substantial, averaging 225 percent before adjusting for inflation. In-

creases at universities with extensive research activities were somewhat larger than at institutions with little or no research, but these differences were marginal—238 percent vs. 223 to 228 percent for other types of institutions—in view of the substantial overall rise for all types of institutions and the long time span covered.

The relative increases in tuition over the period were almost identical for all types of institutions, from the most to the least research-intensive, and for public and private institutions of the same type ([Chart 1](#)). These data strongly suggest that common underlying dynamics affecting all types of universities and colleges, rather than the presence or absence of organized research activity in some of them, are driving the observed increases in tuition and fees charges.

**Chart 1. Increases in full-time in-state undergraduate tuition and fees charges of universities and four-year colleges\* by Carnegie class and type of control: 1980-94**



\*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

## Are research universities charging higher tuition than other institutions?

The research universities' tuition and fees charges have historically been higher than those of other types of universities and colleges. In 1994, the average charge at public research universities was roughly 14 percent higher than that of public doctoral institutions, and 27 to 30 percent higher than those of comprehensive institutions and four-year colleges. Private research universities' charges were about 32 percent above those of their private doctoral counterparts, and 63 to 67 percent higher than those of the other private universities and colleges. The research universities' higher base of tuition charges has resulted in larger dollar increases for them over time than for the other types of institutions ([Table 1](#)). How-



**Peter Murray, Ph.D.**  
*College of Dental Medicine*

**What is the focus of your work at Nova Southeastern University?**

I am very grateful to be a researcher in the exciting field of stem cell research, and to be able to investigate therapies to accomplish tissue regeneration. The majority of my sponsored research is with Dr. Franklin Garcia-Godoy, we currently have a \$1 million National Institutes of health grant to create new methods to evaluate the biocompatibility of dental materials. We also test dental materials, toothpastes, mouthwashes, and disinfectants for use in dentistry. My favorite research is in the field of regenerative dentistry; together with Dr.'s Franklin Garcia-Godoy, Ken Namerow, Sergio Kuttler; we are investigating therapies to regenerate diseased or missing teeth and craniofacial tissues. My Dean, Dr. Robert Uchin, offers encouragement, news items, articles, and ideas to help move our research forward. I get a lot of satisfaction from the accomplishments of my NSU post-doctoral residents; several have won national prizes for research, gained funded research awards, published articles, and prepared Master of Science theses.

**What is your educational background?**

A fortunate one! My mother is proud that I was accepted to study at the University of St. Andrews, which is ranked

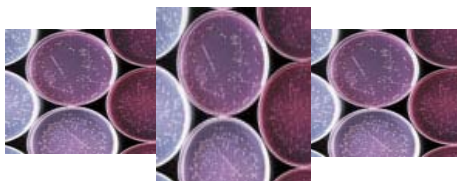
the #1 University in Scotland. It was founded in 1411 and has a lot of tradition and customs that we here at NSU would think are absurd. Such as attending events in red robes and speaking in Latin. My father died from leukemia before I had the chance to go to University, but his death stimulated my interested in Pathology, and so I graduated in that subject in 1996. I was offered a scholarship to study for a Ph.D. in Dentistry at the University of Birmingham in England, and so I graduated in that subject in 2000. I was appointed as a Sir Henry Wellcome Fellow at the same institution after my Ph.D. In 2001, I left England with all my possessions packed into one suitcase for a Research Fellowship position at Indiana University School of Dentistry in Indianapolis.

**How long have you been doing this type of research?**

I use the pathology skills I started learning in 1992 in my research every day to create histology specimens of tissues we have recreated in the laboratory, or to measure the biocompatibility of materials. During my career I have been a visiting researcher in France, Japan and Norway.

**Why did you choose to work at NSU?**

I was working at Indiana University School of Dentistry one day when Dr.'s Garcia-Godoy and Uchin telephoned to ask if I'd like to visit NSU. They heard of me through my publications. I came here only because I knew Dr. Garcia-Godoy as Editor of the *American Journal of Dentistry*, and someone who had made great accomplishments in dentistry from whom I could learn and broaden my research skills. Both Dr. Uchin and Dr. Garcia-Godoy impressed me with their humility and vision of future dental practice. I had not heard of NSU before coming here, and am trying to make it better known through my research.



*Save the Date*

**Hispanic and HBCU  
Grant Writing Workshop for  
Health Services and  
Health Disparities Researchers**

Thursday, April 3 and  
Friday, April 4, 2008  
8:30 AM to 4:40 PM

Nova Southeastern University  
Fort Lauderdale, FL 33328  
University Center, Club Box  
No fee/Registration required

Please share this notice with  
researchers, colleagues and  
graduate students.

For more information contact:  
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Hosted by:  
Nova Southeastern University

Sponsored by:  
The Centers for Medicare & Medicaid Services and the National HBCU  
Research Network for Health Services and Health Disparities

**Look for  
the next issue  
of F.O.R.  
in March!**

## HPD Research Approvals for February 2008

<i>College</i>	<i>Investigator</i>	<i>Protocol Title</i>	<i>Sponsor</i>	<i>Amount</i>	<i>Duration</i>
Optometry	Ken Seger	Bring Down the Barriers to Practice Ownership	Vision Service Plan	\$15,026	one year
Optometry	Deborah Amster	The Inheritance of Congenital Stationary Night Blindness and Ocular Albinism in One Family	NSU-HPD	\$4,085	one year
Optometry	Bai-Chuan Jiang	Accommodative Responses Under Different Visual Field and Color Conditions	NSU-HPD	\$5,000	one year
Optometry	Scott Schatz	Efficacy of Selected Multipurpose Contact Lens Disinfecting Solutions	NSU-HPD	\$2,500	one year
Pharmacy	Simon Leung	The Role of P-Glycoprotein in the Intestinal Transport of Posaconazole in Caco-2 Cells	NSU-HPD	\$5,000	one year

“There is nothing like looking, if you want to find something.  
You certainly usually find something, if you look, but it is not always quite the something you were after.”

*J.R.R. Tolkien, 1892-1973*

*English writer and author of richly inventive fantasy “The Lord of the Rings”.*

“Research is to see what everybody else has seen, and to think what nobody else has thought.”

*Albert Szent-Gyorgyi, 1893-1986*

*Hungarian biochemist and 1937 Nobel Prize Winner for Medicine*

“Somewhere, something incredible is waiting to be known.”

*Dr. Carl Sagan, 1934-1996*

*American astronomer, writer and scientist*

“Research is formalized curiosity. It is poking and prying with a purpose.”

*Zora Neale Hurston, 1903-1960*

*American folklorist and writer*

“The trouble with research is that it tells you what people were thinking about yesterday, not tomorrow.  
It’s like driving a car using a rearview mirror.”

*Bernard Loomis*

“Research is what I’m doing when I don’t know what I’m doing.”

*Werner von Braun*

“Our investigations have always contributed more to our amusement than they have to knowledge.”

*Will Rogers, 1879-1935*

*American entertainer, famous for his pithy and homespun humor.*

The Office of Research in the Health Professions Division provides support for the faculty and staff of the Health Professions Division in their efforts to obtain and conduct research, while ensuring compliance with NSU policy, sponsor policy, and applicable law.

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Continued from page 1

ever, the differential of the research universities' tuition charges relative to those of other types of institutions remained roughly stable over the 1980-94 period (Chart 2).

**Relative increases in tuition charges from 1980-94 were almost identical for all types of institutions, from the most to the least research-intensive universities and colleges.**

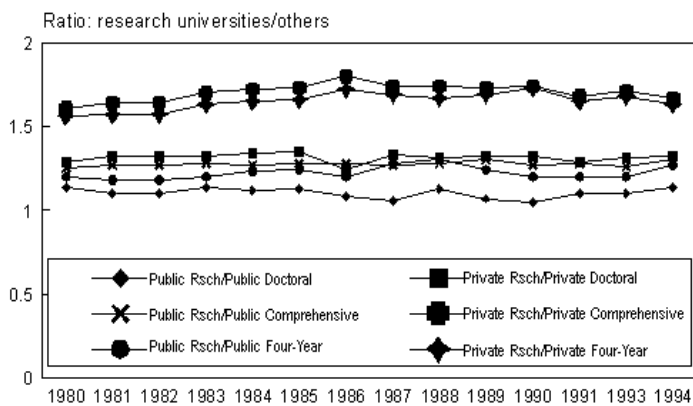
**Table 1. Average tuition and fees charges of universities and four-year colleges\* by Carnegie class and type of control: 1980-94**

Year	Public				Private			
	Research	Doctoral	Comprehensive	Other	Research	Doctoral	Comprehensive	Other
1980.....	\$896	\$787	\$716	\$749	\$4,993	\$3,869	\$3,097	\$3,204
1981.....	1,015	925	799	859	5,762	4,362	3,509	3,661
1982.....	1,015	925	801	859	5,762	4,362	3,517	3,661
1983.....	1,297	1,137	1,015	1,083	7,300	5,543	4,288	4,485
1984.....	1,385	1,234	1,091	1,131	8,053	6,009	4,674	4,880
1985.....	1,397	1,234	1,091	1,124	8,098	5,990	4,682	4,884
1986.....	1,565	1,450	1,223	1,310	9,838	7,921	5,468	5,724
1987.....	1,699	1,608	1,338	1,323	10,430	7,864	5,981	6,186
1988.....	1,846	1,629	1,446	1,417	11,213	8,547	6,458	6,729
1989.....	1,986	1,863	1,533	1,596	12,298	9,298	7,113	7,288
1990.....	2,093	1,984	1,654	1,741	13,572	10,245	7,783	7,845
1991.....	2,403	2,189	1,871	1,995	14,171	11,022	8,421	8,609
1992.....	2,634	2,385	2,086	2,205	15,361	11,737	8,997	9,160
1993.....	2,878	2,588	2,237	2,326	16,204	12,327	9,611	9,816
1994.....	3,075	2,709	2,373	2,428	17,038	12,875	10,194	10,450

\*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions; see Footnote 3 for information on Carnegie classification of academic institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

**Chart 2. Ratio of research universities' tuition and fees charges to those of other four-year institutions,\* by Carnegie class and type of control: 1980-94**



\*excludes two-year and free-standing engineering, health, medical, art, business, and religious training institutions.

SOURCE: National Science Foundation/SRS, Caspar database, special tabulation.

## Does undergraduate tuition subsidize academic research?

The universities and colleges examined received about 60 percent of their total R&D funds from the Federal Government. In 1994, they reported R&D expenditures of \$3.5 billion from their own<sup>[5]</sup> funds, about 19 percent of their total R&D. This amount included an estimated underrecovery<sup>[6]</sup> of \$1.85 billion (an estimate of costs incurred in conjunction with externally supported research—not necessarily federally funded—for which the university was not reimbursed). The unrecovered sum in 1994 was estimated at 9.5 percent of total R&D, a percentage that has been roughly steady for a decade. For Federal research grants, OMB rules govern which costs

an award may cover and which may not be reimbursed (e.g., charges for use of laboratory space originally constructed with Federal funds). In addition, some Federal agencies may require that universities *cost-share*—i.e., by contributing some agreed upon portion of a federally supported project's total cost using funds from other sources<sup>[7]</sup>. Both these items, unreimbursed costs and cost sharing, are counted as universities' own funds, along with institutionally financed organized research; research that is not separately budgeted is generally excluded.

Universities may pay for these "own" research expenditures, including underrecovery and cost sharing, from a research account or from any of their unrestricted funds accounts.<sup>[8]</sup> revenue from state sources, industry, private donors, educational sales and services, auxiliary enterprises such as campus stores, etc., and tuition. Thus, a subsidy of research by tuition cannot be ruled out and might be contributing to the research universities' persistently higher tuition charges. However, the nearly identical tuition increases by all types of institutions would appear to argue against research costs driving up the cost of tuition.

It might be argued that, as growing research costs prompt research universities to increase their tuition charges, the other types of institutions follow suit; i.e., that research costs in some institutions help drive up tuition in all of them. However, it is equally conceivable that the research universities are merely responding to the latest increase in tuition charges of other institutions. Both arguments are consistent with data shown in Chart 2, but which might be right, if either, cannot be determined with confidence. Thus, conceptual problems, the fungibility of university revenues, lack of uniform accounting structures in universities and colleges, and the absence of a sufficiently detailed national database preclude drawing a more precise conclusion.

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