

Almanac

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SENATE

From the Senate Office

No additional nominations were received by the deadline and therefore the Senate Nominating Committee's slate of nominees is hereby declared elected. *Effective May 1* the Faculty Senate Officers for the coming year will be:

Faculty Senate Officers Elected for 1991-92

Chair-elect: David K. Hildebrand (statistics)

Secretary-elect: Peter Dodson (anatomy/vet)

At-large Members of the Senate Executive Committee (to serve a 3-year term beginning May, 1991):

Roger Allen (Oriental studies)
Irving M. Shapiro (biochem/dent)
Susan Wachter (finance)
Herbert S. Wilf (mathematics)

At-large Member of the Senate Executive Committee (to serve a 1-year term beginning May, 1991):

June Axinn (social work)

Assistant Professor Members of the Senate Executive Committee (to serve a 2-year term beginning May, 1991):

David Boyd (English)
Catalina Herrerias (social work)

Senate Committee on Academic Freedom and Responsibility (to serve a 3-year term beginning May, 1991):

Jill Beech (clinical studies/vet)
Robert F. Giegengack (geology)
Mark Stern (social work)

Senate Committee on Academic Freedom and Responsibility (to serve a 2-year term beginning May, 1991):

Liliane Weissberg (German)

Senate Committee on Academic Freedom and Responsibility (to serve a 1-year term beginning May, 1991)

Ian Harker (geology)
Barbara J. Lowery (nursing)

Senate Committee on Conduct (to serve a 2-year term beginning May, 1991)

Madeleine Joulle (chemistry)
Howard Lcsnick (law)
Gino Segre (physics)

Senate Committee on the Economic Status of the Faculty (to serve a 3-year term beginning May, 1991):

Peter Freyd (mathematics)
Ellen Prince (linguistics)

Senate Committee on the Economic Status of the Faculty (to serve a 1-year term beginning May, 1991):

Robert Summers (economics)

The terms of the new Faculty Senate Officers and the newly elected members of the Senate Executive Committee begin with the taking up of new business at the Senate Executive Committee meeting scheduled for May 1, 1991. The terms of the newly elected members of the Committees on Academic Freedom and Responsibility and Economic Status of the Faculty begin on May 1. Full committee memberships will be published this fall in Almanac, or please contact Faculty Senate Staff Assistant Carolyn Burdon, 15 College Hall/6303, Ext. 8-6943.



Dr. Phillips



Dr. Shoemaker



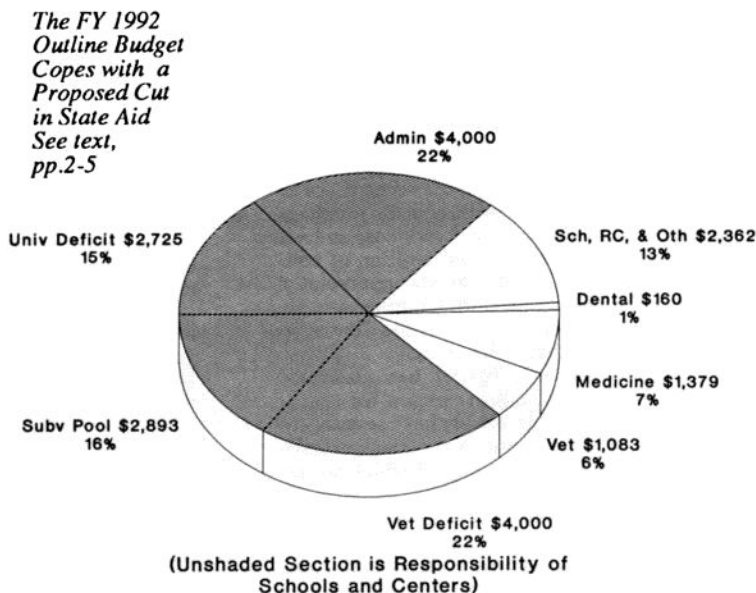
Dr. Hildebrand

Senate's Changing Chairs

The Senate Nominating Committee's slate was elected in its entirety this year. On May 1 Dr. Almarin Phillips, at left above, moves to Past Chair and Dr. Louise Shoemaker, center, takes office as Chair. The incoming member of the triumvirate that meets regularly with the President and Provost is Dr. David Hildebrand, right, who has been moderator of the University Council. For the full list of those elected, see box at left.

Strategy to Manage the Proposed FY 1992 Appropriate Cut

Total cut \$18,602 in Thousands of Dollars



The FY 1992 Budget: Responding to Harrisburg's 'Worst Case' Cut of \$18.6 Million

[The following combines drafts and notes from President Hackney's three talks Wednesday, March 20 (to students at 10 a.m., faculty/staff at 1:30 p.m. and University Council's 4 p.m. session). It also reflects the Trustees Executive Committee action of March 22—unanimous passage of a smaller tuition increase, and larger projected deficit, than had been discussed with the University community on March 20.]

The Governor's Proposed Cuts

This is the time of year when we meet with the community to discuss our recommendation to the Trustees on tuition and fees for next year. Our meeting today takes on special importance because of Governor Casey's proposed 49% cut in Penn's appropriation for fiscal year 1992. This represents a possible \$18.6 million loss to the University.

As a community integrally linked with the fortunes and condition of the City of Philadelphia and of the Commonwealth, we at Penn understand well the difficult fiscal choices facing policymakers both here and in Harrisburg. Indeed, part of our mission as a university has always been to help our City and Commonwealth solve seemingly intractable problems. As an institution, Penn and individual members of its community have historically shown a readiness and willingness to participate in both problem-solving and, when necessary, burden-sharing with the City and State communities of which we are a part.

We believe, however, that the burden the Governor asks us to bear is both onerous and debilitating. It signals a failure to recognize and affirm the academic and service missions, as well as the economic role, that this great university plays in the Commonwealth.

As many of you may know, Penn is the largest private employer in Philadelphia and the fifth largest in the Commonwealth. The Commonwealth has supported Penn with appropriations continuously since 1904 and we believe we have been an excellent investment. In addition to the millions of dollars of free medical, dental and other services the University provides annually, in 1990 Penn attracted \$176 million in research support—most of it federal, and none of which would have come to this state but for the quality of the institution and faculty competing for these funds. Penn paid \$575 million wages (on which its members paid some \$20 million in city wage taxes, and nearly that much in state income taxes as well). Penn spent \$460 million in the purchase of supplies, equipment, and services; and we supported approximately \$60 million of construction projects, a total greatly appreciated by the building industry in the Commonwealth. In many ways Penn gives back to the Commonwealth far more than it receives.

The Governor's proposal has generated painful discussions here on campus, for a cut of this magnitude will inevitably have severe programmatic and economic impacts on our institution and on the community of which we are a critical part.

The state legislature can, as in some years past, restore cuts made by the Governor, and we will diligently urge our legislators to do so. Given the fiscal condition of the state whose

projected budget shortfall grows daily, however we must consider the very real possibility that we may not have this \$18.6 million cut restored—and even the possibility that our whole state appropriation—currently \$36.7 million—is at risk over the next few years. The whole appropriation represents almost 10% of the University's unrestricted budget that supports instruction. It represents flexible funds that provide Penn with an extra margin of excellence.

The Penn Response

After thorough discussion among deans, senior officers, and faculty leaders, and the Academic Planning and Budget Committee, I am proposing a balanced and careful program of budgetary actions that will be embedded in the 1991-92 budget that the Trustee Budget and Finance Committee will act upon on Friday, March 22. The principles guiding this program of actions are that our plan must be one that we are willing to follow if we actually lose the money, that it therefore must be one that protects the academic quality of the University to the greatest extent possible, and that consequently it must be very judicious. With those principles in mind, I am proposing:

First, we will cut at least 300 positions—academic and nonacademic, faculty and staff—beginning immediately and completing the reduction in 1992. This will be achieved through a combination of attrition, reassignment, retirement and layoffs, all directly related to cuts in programs and services.

Second, we will postpone and reevaluate all new capital projects—both new construction and renovation—that are planned but not yet underway. Because we are so far along, we will continue the renovation of the Evans Building and Logan Hall; and we will also go forward with the new Institute for Advanced Science and Technology, which involves federal fund applications.

Third, we will reduce the rate of growth of our budget for student financial aid for the 1992-93 academic year. Our need-blind financial aid policy remains an important priority for us. We will be able to maintain it next year (for FY1992); but if the Commonwealth does not restore its funds, this will put much greater pressure on the policy.

Fourth, I will recommend to the Trustees an increase in undergraduate tuition and fees for the academic year 1991-92 of 6.9% [changed Friday to 6.7% by Trustee action]. This will break what would have been a four-year trend of annually reducing the rate of increase in undergraduate tuition. While we cannot look to revenue solutions for our difficulties, we must expect tuition income to help cover in part our short-term financial problem.

Fifth, I will request the Trustees to allow us to plan a deficit of roughly \$6 million in fiscal year 1992 [changed Friday to \$6.7 million by Trustee action]. This would be our first projected unbalanced budget in 15 years, and I am reluctant to make this request. However, there is no other way to protect our academic core from the damage of hasty decisions of large magnitude. We would, obviously, work very hard to end the year with a balanced budget, but there are no guarantees we will be able to do that.

These are serious steps and the implications of

the Governor's proposed cuts are significant. We will be working very hard to make sure the legislature understands how unwise such a disinvestment in Penn would be, and we take courage from the fact that the legislature has supported continuous appropriations for the University for the past 88 years. At the same time, while our goal will be the full restoration of the appropriation so that Penn is treated just as the other research universities are treated (the Governor recommended a 0% increase for them), our planning must assume that the Governor will have his way. I ask for your patience, understanding and, above all, your willingness to continue to make Penn a better place despite the prospect of leaner times. Our 252nd year may be less joyful than our 250th, but I believe it can be equally productive.

—Sheldon Hackney

Distributing the Loss

Following the President's presentation above, the University's new budget director Steve Golding gave an audiovisual presentation showing how Penn's income and expense will be distributed in the outline budget for FY 1992 (starting next page). Of the \$18.6 million cut proposed by Governor Casey, about half falls directly on the Schools of Veterinary Medicine, Medicine and Dental Medicine, whose methods of handling the shortfall will be differential. As the central University copes with the remaining \$9.2 million share of the overall problem:

— About \$4 million of the problem is assigned to the central administration, where growth has been trimmed to 2% versus the 5% originally planned and there will be true cuts in programs and services, to be determined.

— Another \$2.36 million is to be the responsibility of the schools as they refine their own budgets for the coming year.

— The remaining \$2.9 million cut is from what is known as the Provost's Subvention Pool—funds that the provost distributes annually to the Schools for educational purposes. Measures announced by the Provost to cope with this cut are:

- Freeze the level of graduate fellowships at the FY 1991 level of \$6.5 million. (Earlier plans had called for increasing the fund.)

- Freeze the Research Foundation at the FY 1992 level of \$1.1 million. (It had been slated for growth to \$1.3 million as part of a plan to bring it to \$2 million by 1995.)

- Suspend the Undergraduate Initiatives Fund (a program for seeding new educational ventures, announced in *Almanac* December 4, 1990).

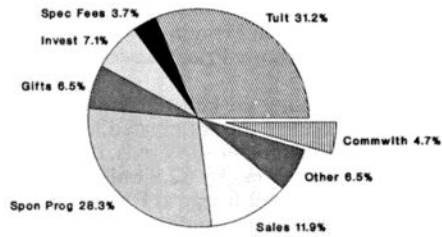
- Suspend new financial commitments to the Trustee Professorship Fund. (Commitments already made will be honored, and searches already authorized may go forward, but without financial commitment at this time.)

- Postpone the Social Science Research Institute (proposed in the five-year plan the Provost released in *Almanac* October 9, 1990)

- Suspend the Provost's salary reserve, which has been available to Schools to reward special merit including outstanding teaching.

see page 4 for faculty salary trends

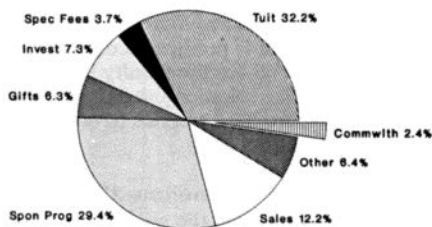
REVENUE BUDGET EXCLUDING HEALTH SERVICES FY 1991



\$769 million

Reflects Commonwealth abatement of \$1,317,000.

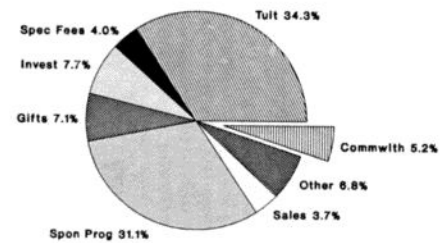
REVENUE BUDGET EXCLUDING HEALTH SERVICES FY 1992 Preliminary



\$802 million

Reflects Commonwealth reduction of \$18,602,000.

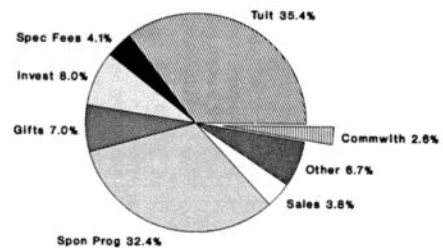
REVENUE BUDGET EDUCATION AND GENERAL FY 1991



\$700 million

Reflects Commonwealth abatement of \$1,317,000.

REVENUE BUDGET EDUCATION AND GENERAL FY 1992 Preliminary



\$729 million

Reflects Commonwealth reduction of \$18,602,000.

On this and the following pages, charts from the Office of Budget and Planning show where the University budget stands without the Hospital and Clinical Practices' FY1992 plans, which are set later in the budget cycle.

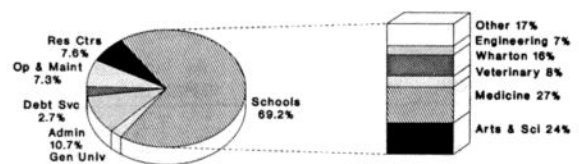
These graphics were shown during last week's budget briefings along with others including a chart that shows rising energy costs. Below are the criteria used to make decisions on allocations this year, which were also distributed in writing at the sessions.

Key Goals for FY 1992 Budget

- Account for the Commonwealth appropriation cut in a reasoned and rational manner.
- Spread the impact of the \$18.6 million revenue loss such that the core academic mission is protected.
- Rely predominantly on reductions in expenditures rather than increases in revenues in addressing the Commonwealth reduction.
- Continue those policies that have permitted salaries to be market competitive.
- Continue need blind admissions policy.
- Provide substantial increase in University Police budget.
- Continue to improve allocations to library and technology development.

EDUCATION AND GENERAL BUDGET UNRESTRICTED & RESTRICTED EXPENDITURES

FY 1991

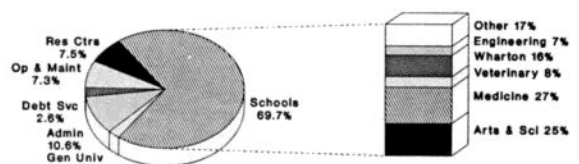


\$700 million

Reflects Commonwealth abatement of \$1,313,000.

EDUCATION AND GENERAL BUDGET UNRESTRICTED & RESTRICTED EXPENDITURES

FY 1992 Preliminary



\$735 million

Reflects Commonwealth reduction of \$18,602,000.

Faculty Salaries

The annual salary policy memos are not due until April, but as part of the outline budget discussed with the campus last week, the Budget Office released the latest graphs showing faculty salary trends at Penn in relation to national and state Consumer Price Indices (CPIs).

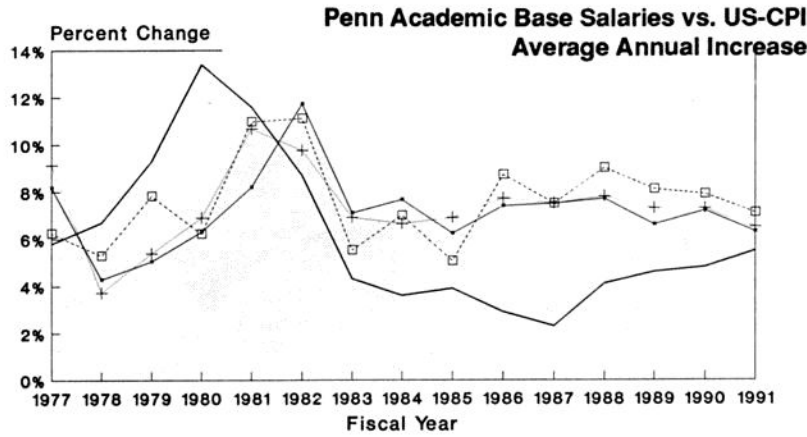
Among the belt-tightening measures being taken to meet the anticipated loss of \$18.6 million in Commonwealth funds, the Provost's Subvention Pool is cut by \$2.9 million in FY1992 planning. This will freeze at FY1991 levels two items that had been intended for increase (graduate fellowships frozen at \$6.5 million and the Research Foundation at \$1.1 million). A third casualty if the legislature does not overturn Governor Casey's cutback will be the Provost's merit pool, which will be eliminated for the year. The Trustee Professorships program would go on hold except for commitments already made; searches already authorized can continue, but without assurance of special term-chair funding for now.

But, said Provost Michael Aiken, the coming budget is predicated on maintaining competitive salaries for the faculty. The University Budget Office released the data on this page showing where base salaries (overall) lie in relation to inflation.

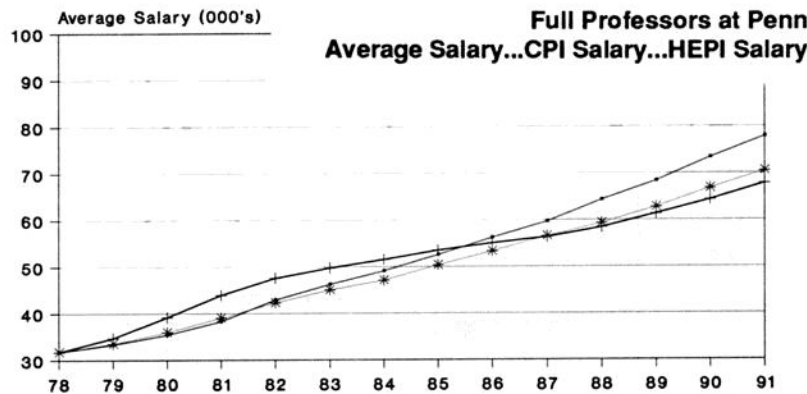
What Is Sheltered?

Aside from the goal of maintaining competitive salaries, University administrators say they will protect three areas from cutback, in line with earlier pledges to faculty, staff and students: As shown below, spending will go forward for increasing security services, computing and library improvements.

data on undergraduate tuition and financial aid appear past inserts



Excluding Medical School



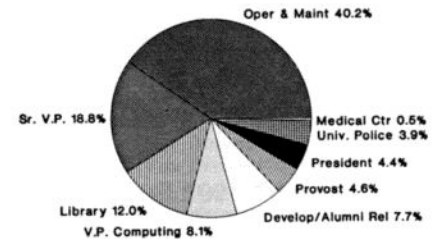
'78 Escalated by CPI & HEPI Faculty Excludes Medical School

Changes in Faculty Salaries and the Consumer Price Index, 1972-73 to 1990-91

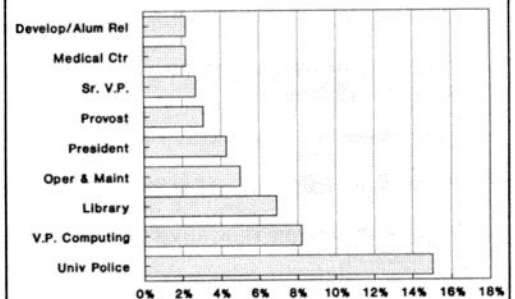
	Full Professors at Penn			Full Professors at Penn	
	Av. Increase in CPI	Av. Increase in Monetary Salary	Av. Increase in Real Salary	Av. Increase in Monetary Salary	Av. Increase in Real Salary
	(%) (c)	(%) (a)	(%) (b)	(%)	(%) (b)
1972-73	4.0	4.1	0.1	5.2	1.2
1973-74	9.0	5.1	-3.6	5.6	-3.4
1974-75	11.1	5.8	-4.8	6.2	-4.9
1975-76	7.1	6.0	-1.0	2.2	-4.9
1976-77	5.8	4.7	-1.0	8.2	2.4
1977-78	6.7	5.3	-1.3	4.3	-2.4
1978-79	9.4	5.8	-3.3	5.0	-4.4
1979-80	13.3	7.1	-5.5	6.3	-7.0
1980-81	11.6	8.7	-2.6	8.2	-3.4
1981-82	8.7	9.0	0.3	12.0	3.3
1982-83	4.3	6.4	2.0	7.7	3.4
1983-84	3.7	4.7	1.0	6.3	2.6
1984-85	3.9	6.6	2.6	6.9	3.0
1985-86	3.0	6.1	3.0	7.0	4.0
1986-87	2.2	5.9	3.6	6.1	3.9
1987-88	4.2	4.9	0.9	7.7	3.5
1988-89	4.6	NA	NA	6.6	2.0
1989-90	4.8	NA	NA	7.2	2.4
1990-91	(e) 5.5	NA	NA	6.3	0.8

- Sources: William G. Bowen and Jules Ann Sosa, *Prospects for Faculty in the Arts and Sciences*, (Princeton University Press, 1989), p. 148.
Penn Full Professor Salaries: The Office of Institutional Research, University of Pennsylvania.
- (a) Measured in current dollars. All academic ranks in all institutions reporting comparable data for each of the periods since 1971-72.
- (b) The average increase in real salaries is the percentage increase in monetary salary less the percentage increase in the Consumer Price Index.
- (c) CPI calculated at academic year ending 6/30.

FY92 ADMINISTRATIVE BUDGETS



Rate of Growth in FY92 Administrative Budgets



Tuition, Fees...and Financial Aid

In last Wednesday's talks on the FY 1992 budget, the long-term trend and annual objective of "decreasing the rate of increase" in undergraduate tuition was in jeopardy as planners gave the projected increase at 6.9% so that a modest \$700,000 of the Commonwealth's \$18.6 million cut would be made up through tuition revenue. When the Trustees Committee on Budget and Finance met Friday, however, they voted to increase the deficit limit by \$700,000 instead, leaving the tuition increase at 6.7% as shown in Table 1. (Further below, Table 2 shows the history of tuition and fees at Penn, and Table 3 highlights the Penn tuition-increase patterns in relation to peer institutions nationwide since 1984. A bar chart, labeled #4, shows the University in relation to average and median increases of schools in the Consortium on Financing Higher Education (COFHE).)

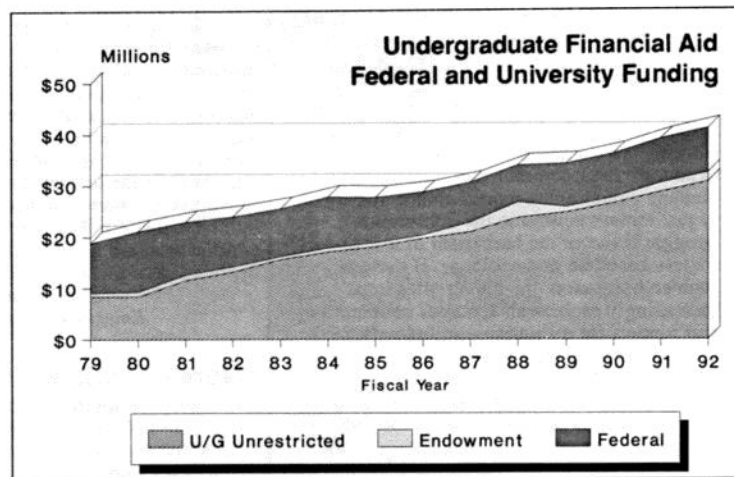
1. Tuition and Fees for Academic Year 1991-1992

	1989-90	1990-91	Change	1991-92	Change
Undergraduate					
Tuition	12,553	13,420	6.9%	14,347	6.9%
General Fee	1,147	1,220	6.4%	1,297	6.3%
Technology Fee	250	250	0.0%	250	0.0%
Tuition & Fees	13,950	14,890	6.7%	15,894	6.7%
Residential Costs (Double Room/Quad)	2,980	3,159	6.0%	3,342	5.8%
Dining Cost (Meal Plan)	1,995	2,095	5.0%	2,217	5.8%
Total	18,925	20,144	6.4%	21,453	6.5%
Graduate					
Tuition	13,662	14,608	6.9%	15,619	6.9%
General Fee	848	902	6.4%	* 965	7.0%
Tuition & Fee	14,510	15,510	6.9%	16,584	6.9%
Professional					
General Fee	664	706	6.3%	* 756	7.1%

* Graduate and Professional General Fees reflect an increase of 7.2% plus a GAPSA approved surcharge of 6 dollars dedicated to graduate and professional student activities.

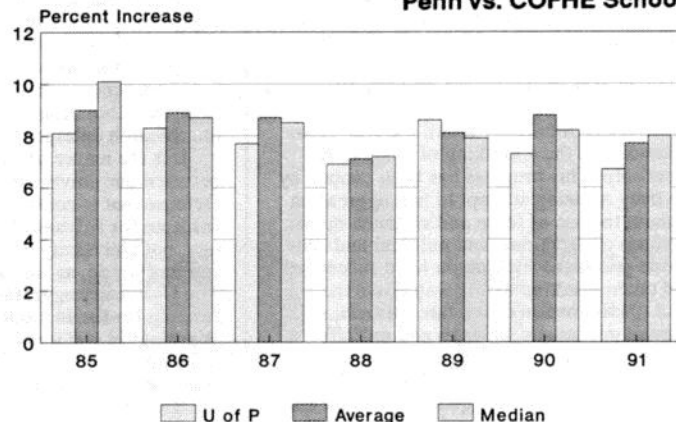
2. History of Undergraduate Tuition and Fees at Penn

Year	Tuition	Change	Gen'l Fee	Change in Fee	Tech Fee	Total T&F	Change in T&F
FY 75	3,100		350		0	3,450	
FY 76	3,430	10.6%	360	2.9%	0	3,790	9.9%
FY 77	3,755	9.5%	370	2.8%	0	4,125	8.8%
FY 78	4,080	8.7%	370	0.0%	0	4,450	7.9%
FY 79	4,420	8.3%	405	9.5%	0	4,825	8.4%
FY 80	4,800	8.6%	470	16.0%	0	5,280	9.2%
FY 81	5,490	14.4%	510	8.5%	0	6,000	13.9%
FY 82	6,315	15.0%	585	14.7%	0	6,900	15.0%
FY 83	7,320	15.9%	680	16.2%	0	8,000	15.9%
FY 84	8,125	11.0%	755	11.0%	0	8,880	11.0%
FY 85	8,790	8.2%	810	7.3%	0	9,600	8.1%
FY 86	9,525	8.4%	875	8.0%	0	10,400	8.3%
FY 87	10,258	7.7%	942	7.7%	0	11,200	7.7%
FY 88	10,968	6.9%	1,008	7.0%	0	11,976	6.9%
FY 89	11,678	6.5%	1,072	6.3%	250	13,000	8.6%
FY 90	12,553	7.5%	1,147	7.0%	250	13,950	7.3%
FY 91	13,420	6.9%	1,220	6.4%	250	14,890	6.7%
FY 92	14,347	6.9%	1,297	6.3%	250	15,894	6.7%



Twelve years ago, as seen at left on the chart above, University and federal sources were roughly equal in supporting undergraduate financial aid. But as costs have risen the federal share declined (and despite some growth in the contribution made by endowment) the bulk of financial aid now comes from unrestricted funds—the funds currently at risk in Harrisburg.

4. Comparison of Tuition Increases Penn vs. COFHE Schools



3. Undergraduate Tuition and Fees at Peer Schools

	1984	1985	Change	1986	Change	1987	Change	1988	Change	1989	Change	1990	Change	1991	Change
Brown	9,405	10,210	8.6%	11,149	9.2%	12,032	7.9%	12,876	7.0%	13,754	6.8%	14,790	7.5%	15,740	6.4%
MIT	9,600	10,300	7.3%	11,000	6.8%	11,800	7.3%	12,500	5.9%	13,400	7.2%	14,500	8.2%	15,600	7.6%
Harvard	9,700	10,550	8.8%	11,380	7.9%	12,225	7.4%	12,890	5.4%	13,665	6.0%	14,560	6.5%	15,530	6.7%
Princeton	9,450	10,200	7.9%	10,960	7.5%	11,780	7.5%	12,550	6.5%	13,380	6.6%	14,390	7.5%	15,440	7.3%
Johns Hopkins	7,840	8,860	13.0%	9,680	9.3%	10,500	8.5%	11,320	7.8%	12,340	9.0%	13,360	16.4%	15,380	7.1%
Dartmouth	9,145	9,810	7.3%	10,764	9.7%	11,679	8.5%	12,474	6.8%	13,380	7.3%	14,465	8.1%	15,372	6.3%
Yale	9,050	9,750	7.7%	10,520	7.9%	11,340	7.8%	12,120	6.9%	12,960	6.9%	14,000	8.0%	15,180	8.4%
Cornell	8,900	9,600	7.9%	10,500	9.4%	11,500	9.5%	12,300	7.0%	13,140	6.8%	14,040	6.8%	15,164	8.0%
Chicago	8,043	8,807	9.5%	9,756	10.8%	11,521	18.1%	12,300	6.8%	13,125	6.7%	14,025	6.9%	15,135	7.9%
PENN	8,880	9,600	8.1%	10,400	8.3%	11,200	7.7%	11,976	6.9%	13,000	8.6%	13,950	7.3%	14,890	6.7%
Columbia	8,942	9,716	8.7%	10,476	7.8%	11,324	8.1%	12,052	6.4%	12,878	6.9%	13,961	8.4%	14,793	6.0%
Rochester	7,875	8,478	7.7%	9,649	13.8%	10,599	9.8%	11,446	8.0%	12,305	7.5%	13,425	9.1%	14,555	8.4%
Stanford	9,027	9,705	7.5%	10,476	7.9%	11,208	7.0%	11,880	6.0%	12,564	5.8%	13,569	8.0%	14,280	5.2%
Average	8,912	9,660	8.4%	10,516	8.9%	11,439	8.8%	12,206	6.7%	13,069	7.1%	14,157	8.3%	15,158	7.1%
Median	9,027	9,716	7.6%	10,500	8.1%	11,500	9.5%	12,300	7.0%	13,125	6.7%	14,040	7.0%	15,180	8.1%

Speaking Out

Not the Answer

It seems to me that David Ludden's comments concerning the military option chosen by the University with regard to a new technology center (*Almanac* 2/26) are not trivial ones to be answered merely by reference to past practices, but rather go to the heart of the responsibilities of universities particularly at this juncture in history. The question, simply put, is whether major institutions of learning have a moral and ethical obligation to educate their communities toward more humane values and a more humane society or just remain neutral in the continuous struggle between the barbarism of war and a society based on non-violence. If there is such an obligation, the universities must increasingly eschew all forms of cooperation and support for militarism until they have fully dissociated themselves from institutions committed to the perfection and prosecution of war and violence and increasingly devote themselves to non-violent alternatives.

At this juncture in history the issue of violence vs. non-violence has become transcendent in human relations, in interpersonal affairs, in organized violence in communities and in military inspired and directed international violence. In fact, it is most ominous that organized high tech military violence orchestrated by the U.S. has effectively reversed the whole thrust of the movement towards world peace, towards the rule of world law through sanctions and regulations and towards the goal of nuclear and conventional disarmament. Since the end of the Vietnam War, mankind has seen the beginning of these peaceful steps, alongside the collapse of military blocs, the end of the cold war and the rekindling of US-USSR friendship. This progress has been capped by the truly amazing attempt to halt aggression without the use of force and violence by the methods of sanctions, and political and economic pressure which might have succeeded and taken mankind a long way down the road to elimination of warfare. Instead, ingrained militaristic attitudes and military pressures aborted this unique human effort; the assembled forces supporting non-violence were simply inadequate to contain and control the institutionalized philosophy of

militarism and war as the arbiters of justice between nations.

Is it not time for the University to take the lead in preparing people and communities for the non-violent resolution of conflicts? Shouldn't universities now begin to provide the basis for replacement of existing violent institutions with non-violent substitutes or should they continue to link themselves in any way to the practitioners of warfare in a world which ever more clearly calls for new ways of conducting human affairs. Will the Gulf War be the last because the increasing acceptance of non-violence as a result of intellectual commitment to non-violent conflict resolution will make the next U.N. application of these principles effective?

—Robert Rutman, Professor Emeritus, Veterinary Medicine

More Questions

Barry Cooperman responded to my letter in the 26 February *Almanac* by quoting policies that guarantee "unrestricted dissemination of all findings" from sponsored research and that "resources or data sources ... must be free of control by the sponsor." Such policies have the effect of prohibiting classified research. They do not prevent the substance of research from being determined by sponsors; they do not prevent the conduct and evaluation of research from being determined by sponsors as a condition for continued funding. All researchers know their need for funding gives sponsors influence over research priorities. That is why sponsors sponsor research. The interaction of researchers and sponsors occurs within a nexus of institutional collaboration that lies at the heart of the research enterprise.

It is the nature of the collaboration between our university and the Department of Defense that is controversial in the new Institute for Advanced Science and Technology, not University policy statements or DOD funding per se, as Barry Cooperman suggests. The University aggressively pursued DOD funding for the Institute through a lobbyist in Washington and it is likely that during the negotiations involved the infrastructure and research program of the Institute were designed to meet DOD specifications. To what extent, we have not been told. But,

Barry Cooperman drafted a "Program Statement" for the Institute, dated 16 March 1990, which indicates that projects at the Institute may be dedicated to technology development related to the Star Wars program. The University community has a right to full disclosure of the extent to which the DOD has determined the research priorities of the proposed Institute.

The University cannot be expected to reject research funding on the evaluating of sponsors' intentions. But the administration has a responsibility to assure us that our resources are not simply being sold to the highest bidder. That the DOD can outbid other sponsors is a national problem outside our control. But the location, design, and operation of the Institute should be under our control. To affect that control, we as a community need to know the terms of University collaboration with the Department of Defense. Information on the origination of research should be as available for "unrestricted dissemination" as the results of research.

—David Ludden, Associate Professor, History and South Asia Regional Studies

Response from Dr. Cooperman

In responding to Professor Ludden I enclose the full draft Program Statement for the Institute for Advanced Science and Technology to which he refers. It is possible that some of this work will have special interest for the Department of Defense, just as some of the ongoing work in SEAS and SAS has such interest. It is, however, clear, that most of the proposed work does not fall into this category. Indeed, my draft was written based exclusively on the programs, present and projected, of the departments that will contribute most to the Institute's faculty.

The notion that the program of the IAST was designed to meet DOD specifications or that our resources are "being sold to the highest bidder" is simply without merit. Indeed, our principal resources are our faculty, and the central administration has neither the ability nor the wish to force them into specific lines of research. This is, of course, as it should be.

—Barry S. Cooperman, Vice Provost for Research

Draft Program Statement: Institute for Advanced Science and Technology

(Attachment to Dr. Cooperman's letter above)

The Institute of Advanced Science and Technology will provide essential new research space that will integrate important, cutting-edge research efforts in the Schools of Engineering and Applied Science and the School of Arts and Sciences, and help to assure Penn's place as a leading research University in the 21st century.

The Institute will complete an architectural ensemble, physically linking the existing Engineering and Chemistry Department complexes. Such linkage is critical to the success of the Institute, both in facilitating intellectual interaction among our scientists and engineers, and, by avoiding duplication, in providing for the sharing of expensive equipment and facilities in a cost-effective manner. Physical linkage is important from an environmental and safety standpoint as well. Much of the work performed in the Institute will involve the use of potentially

hazardous materials, including radioactive substances. Such materials will frequently have to be transported from one laboratory to another, to permit a variety of measurements to be made. Having a set of physically linked buildings will allow safe transport of such materials, eliminating the risk posed by surface transport across the busy and crowded Penn campus.

Establishing the Institute for Advanced Science and Technology will require a) the construction of a modern laboratory building containing 50,000 net square feet, and equipped for demanding chemical and biological experiments; b) the complete renovation of the existing space and the construction of new space to provide a total of 45,000-50,000 net square feet suitable for computing activities and other dry lab experiments and requisite office space; c) the renovation of Hayden Hall to provide modern,

high quality space for the Center for Scientific and Technological Information Resources; and d) the physical linkage of these new and renovated buildings with existing buildings in the Chemistry Department and Engineering School complexes, either above or below ground level as appropriate.

1. The New Laboratory Building

The New Laboratory Building will have a standardized high-function wet laboratory format, that will be flexibly configured. A model for such a building is provided by the existing 1973 wing of the Chemistry Department complex. This building meets the needs of experimental scientists who collectively employ a wide variety of techniques and place very different demands on the building's infrastructure.

The New Laboratory Building will provide

space for three principal research thrusts as well as for common research facilities. Faculty participation in these thrusts will be drawn principally from the Departments of Chemistry, Chemical Engineering and Bioengineering, which are currently housed in buildings (the Chemistry Department complex, the Towne Building, and Hayden Hall, respectively) that are immediately adjacent to the New Laboratory Building site. Two of these thrusts are related to the biological and medical sciences, reflecting the highly interdisciplinary nature of basic research at Penn and the ability of faculty to forge collaborations with their colleagues in the Schools of Medicine, Veterinary Medicine and Dental Medicine. In this connection it is interesting to note that 45% of the total sponsored research funding of these three departments, some \$22 million of a total of \$48 million in the past 5 years, comes from the National Institutes of Health. Below we discuss each of these thrusts in turn.

a. Molecular understanding of life processes—the focus here will be on the development of potential therapeutic agents, based on detailed knowledge of the structure and function of cells and their biomacromolecular components—proteins, nucleic acids, and biological membranes—and the involvement of these components in gene expressions and cellular function. The approaches to be employed include: synthetic and mechanistic organic chemistry, biological chemistry, genetic engineering, biomacromolecular structure determination (including X-ray crystallography, X-ray and laser light scattering, nuclear magnetic resonance spectroscopy, and computer modeling of biomacromolecular structure, making strong use of advanced graphics), studies of cell migration, adhesion, and growth and their relationships to bioreactor design and to the efficient purification of biological macromolecules, and studies of cellular interaction with electrical and radiation energy. Much of this work will require advanced computer modelling of multiple interacting systems. The faculty for this research thrust will be drawn principally from the departments of Chemistry, Chemical Engineering, and Bioengineering. Faculty from the Departments of Computer and Information Science and Biochemistry and Biophysics will also participate.

b. New materials and catalysts—this research will center on exploiting new methods of polymer and organometallic synthesis and characterization and new methods of forming and characterizing surfaces to develop materials and catalysts of wide potential applicability. Specific examples include conducting and semiconducting polymers, with a longterm goal of developing lightweight, high power density batteries, the development of materials having high energy bonds and rapid burn rates, having great potential as propellants, and the formulation and engineering of specific probes for use in advanced sensors. This work will exploit several of the technologies already described in Section a. It will also make heavy use of the neighboring electron microscopy center, housed in the Edison building. The faculty for this research thrust will be drawn from the Departments of Chemistry, Materials Science and Engineering, Electrical Engineering and Chemical Engineering.

c. Human injury and aging—this research will focus on the use of rational engineering design to minimize human injury in the workplace and on the development of advanced diagnostic tools and prosthetic devices to address health

problems of particular relevance to the elderly. Of particular interest are the redesign of vehicles to minimize the risk of head injury in the event of an accident, the development of convenient, lightweight modalities enabling human beings to function well in extreme environments, the use of electric currents, implants and new materials for the treatment of patients with muscular or skeletal diseases or injuries and the use of advanced instrumentation for the early detection of retinal detachment. This thrust will principally involve faculty from the Bioengineering Department and from several departments and programs in the Medical School (Surgery and Orthopedic Surgery, Ophthalmology, Geriatrics, the Institute for Environmental Medicine), but will also involve collaborative efforts with the Departments of Materials Science and Engineering and Electrical Engineering.

d. Common facilities—space will be provided for common facilities in such areas as spectroscopy, routine chemical and cellular preparations, electrical and machine shops, and a stockroom.

2. Renovated Space Plus Additional New Construction

This group of linked buildings will provide dry labs and office space for four research thrusts, as well as for the Center for Technology Transfer, as described below.

a. Computer and Information Sciences—research in this area will concentrate on the analysis and optimization of computer and communications network management and control, the development of parallel computing machines offering great speed and reliability, the development of highly intelligent machines (or robots) that can respond to their environments through their own sensors (i.e., optical, aural, thermal, tactile, or chemical) and the improved integration of data bases and programming languages, leading to the development of more flexible and higher order programming languages having greater reliability and offering easier accessibility to programmers. These research thrusts will have important applications in such areas as the efficient control of geographically dispersed manufacturing centers, a decreased concept-to-production cycle for new product development, and enhanced manufacturing capabilities due to automated procedures made possible through the use of intelligent and sensing robots. They also should facilitate the introduction of advanced workstations into University curricula and lead to greater productivity of modestly trained workers. The faculty for these research thrusts will be drawn mainly from the Department of Computer and Information Science, but will also involve members of the Electrical Engineering and Psychology Departments.

b. Cognitive Sciences—Research in this area seeks to determine the essential nature of cognition: how do people think and learn. This is a very ambitious and broad-based program, and brings together faculty from a wide variety of disciplines. The applications of this work are equally widespread. They will be important for the integration of syntax, semantics, discourse, and spoken language, leading to the interaction of people with computers through the use of natural language. In addition, they will also impact on the development of artificial intelligence and expert systems, on the design of sensors for robots, on advanced graphics presentation, on models for neural networking, and on linkages between logic and computation. The faculty for this research thrust will be drawn from the Departments of Computer and Infor-

mation Science, Psychology, Philosophy, Linguistics, Electrical Engineering, and Anatomy.

c. Imaging and Graphics—research in this area is directed toward the development of methods of display that allow for maximally efficient presentation of the vast amounts of data that followed the introduction of microprocessors into detecting equipment. Such work requires sophisticated data-handling procedures, and must incorporate the pattern-recognition properties of the human brain. A particular area of interest at Penn is the images produced by the use of non-invasive techniques such as CAT, MRI or PET scanning. Other applications may be found in elucidating the complex structures of biological macromolecules (see New Laboratory Building, program a, above) and in geographical (topological, city planning) studies. The faculty for this research thrust will be drawn from the Departments of Computer and Information Science, Radiology, and Chemistry.

d. Ultrafast detectors—research in this area focuses on the development of ultrafast, intelligent detectors, capable not only of detecting as many as 10^6 signals per second, but also of selecting, through rapid calculation, which of these signals provide the most important information on the phenomenon under investigation. A particular application is in the development of sensors for the proposed superconducting supercollider, but such detectors will be generally useful in any context in which there is a requirement for the rapid processing of large numbers of signals (see program c, above). The faculty for this research thrust will be drawn from the Departments of Physics, Electrical Engineering, and Chemistry.

e. Center for Technology Transfer—this center will have as its goal the formation of strong collaborative linkages between the University and private corporations, with the twin aims of transferring the results of University research to the commercial sector, thereby exploiting these results for the public benefit, and of identifying new sources of funding for University research efforts. While the Center's purview will extend to virtually all sponsored research at the University, its placement within the Institute for Advanced Science and Technology will have the great benefit of keeping its staff in direct contact with the vitality of University research.

f. Common facilities—New Morgan will include common facilities in such areas as advanced workstations, graphics/design and microfabrication.

3. Renovated Hayden Hall

A major renovation of Hayden Hall will be carried out to house the Center for Scientific and Technological Information Resources. This center will have as its goal the support of scientific and engineering research at the University through the employment of state-of-the-art electronic information bases, reference services, and delivery techniques, with the goal of discovering information and making it available to faculty and students wherever they work, in formats that foster easy and effective use. The Center will be available as a resource for use by local corporations and state, city, and government agencies.

4. Physical Linkages Between Buildings

We envision underground links between: the Towne Building and New Morgan to the east and Hayden to the South; New Morgan and New Laboratory Building; and Hayden and New Laboratory Building; and the Chemistry Complex and the New Laboratory Building.

Council of Penn Women: Summer Research Support for Faculty

The Trustees' Council of Penn Women announces a \$3000 summer research stipend to be awarded in support of the research of a female faculty member or of a faculty member whose research directly affects women. Those interested will submit a 1-2 page summary of the research to be undertaken, an explanation of how the stipend will facilitate the research, a curriculum vitae, and the name of a University reference. The summary should be sent no later than *May 1, 1991* to:

Professor Janice Madden
Director of the Alice Paul Research Center
106 Logan Hall/6304

Research proposals will be reviewed, and the stipend awarded, through a peer review process. It is expected that the research, or a significant subset thereof, will be concluded during the summer of 1991, and a written report will be submitted to the review panel and to the Trustees' Council. Any subsequent publication of the research results will acknowledge the support of the Council.

Nominations for Leadership Award

In remembrance of Peter and Elizabeth Greene Wiley, and in recognition of the energy and vitality they brought to the city, a Leadership Award has been established to encourage, nurture and develop civic initiatives. Any person age 35 or younger and making a significant difference to improving the quality of life in Philadelphia will be considered. Nominations may be in the form of a two-page letter to the selection committee, c/o Leadership, Inc., 530 Walnut Street, due by 5 p.m., *April 10, 1991*. Nominations must adhere to and adequately address the following criteria:

- active leadership within the boundaries of the City of Philadelphia (preferably the individual should live in the City, with activities citywide, not limited to a particular neighborhood or area of the city);
- age 35 or less during the calendar year 1991;
- demonstrate significant accomplishment in an area that contributes to improving the city's quality of life, and making the city a more attractive place to live (special consideration will be given to those whose contributions are in the areas of historic preservation, city beautification, the arts, or city planning and development); and,
- exhibit a sense of humor and a high degree of energy, personal curiosity, integrity, commitment and a willingness to take on difficult challenges.

A cash stipend of \$5,000 will be made to the recipient of the award, or to the non-profit organization of the recipient's choice.

The University of Pennsylvania Police Department

This report contains tallies of part 1 crimes, a listing of part 1 crimes against persons and summaries of part 1 crime in the five busiest sectors on campus where two or more incidents were reported between **March 18, 1991 and March 24, 1991**.

Totals: Crimes Against Persons-0, Thefts-11, Burglaries-0,
Thefts of Auto-0, Attempt Theft of Auto-0

Date	Time	Location	Incident
36th to 37th; Spruce to Locust			
03/22/91	8:35 PM	Steinberg/Dietrich	Secured bike taken from rack
03/23/91	12:46 PM	200 Block 37th	Secured bike taken from rack
37th to 38th; Locust to Walnut			
03/21/91	11:23 AM	Bookstore	Wallet taken from complainant by pickpocket
03/21/91	1:16 PM	Bookstore	Retail theft/actor apprehended
40th to 42nd; Baltimore to Walnut			
03/20/91	1:58 PM	Evans Bldg	Purse and contents taken from unattended office
03/22/91	7:25 PM	Sigma Phi Epsilon	License plate taken from auto

There was no 4th and 5th busiest sectors during this period.

Safety Tip: To prevent bike theft use adequate locking equipment. Small gauge padlocks, chains and cables are not recommended. The large type locks, like kryptonite, are your best bet. Also, never lock your bike only by the wheels. Lock the frame too.

18th District Crimes Against Persons Report

Schuylkill River to 49th Street, Market Street to Woodland Ave
12:01 AM March 11, 1991 to 11:59 PM March 17, 1991

Totals: Incidents-14, Arrests-3

Date	Time	Location	Offense/Weapon	Arrest
3/11/91	9:45 PM	3801 Chestnut	Robbery/gun	No
3/12/91	6:29 PM	4612 Walnut	Robbery/gun	No
3/12/91	9:45 PM	3900 Chestnut	Robbery/gun	Yes
3/13/91	1:20 AM	4700 Springfield	Robbery/gun	No
3/13/91	9:30 AM	4800 Walnut	Robbery/strong arm	No
3/13/91	8:20 PM	4700 Chester	Robbery/strong arm	Yes
3/14/91	11:25 AM	4040 Locust	Robbery/strong arm	No
3/14/91	7:40 PM	4000 Ludlow	Robbery/strong arm	No
3/15/91	12:05 AM	400 S 40	Robbery/gun	No
3/16/91	12:14 AM	4632 Hazel	Robbery/strong arm	No
3/16/91	2:21 AM	3800 Chestnut	Agg Assault/strong arm	Yes
3/16/91	3:00 PM	4600 Market	Robbery/strong arm	No
3/17/91	3:35 PM	4600 Springfield	Robbery/strong arm	No
3/17/91	9:19 PM	20 S 40	Robbery/strong arm	No

Update

MARCH AT PENN

TALKS

29 Management of the Neutropenic Host; Kevin Fox, medicine, Hematology/Oncology Section/HUP; noon, Agnew-Grice Auditorium, 2nd Floor Dulles, HUP (Department of Medicine).

Change: the lecture on *Preschool Education for Children with Special Needs* originally scheduled for March 28 at 4:15 p.m. has been moved to *April 9 at 4:30 p.m.*, Room B-21, Stiteler Hall. See April pullout calendar for details.

Deadlines

The deadline for the May at Penn pullout calendar is April 9. The deadline for the Summer at Penn pullout calendar is May 14. The deadline for the weekly updates is each Monday for the following week's issue. See addresses below.

Hazard Communication Standard

A seminar, "Hazard Communication Standard," mandated by the Occupational Health and Safety Administration (OSHA), will be presented by the Office of Environmental Health and Safety, in the Medical School on Tuesday, April 2, 2-3 p.m. in Room 104, Medical Education Building.

This program is designed to transmit information to personnel concerning the safe handling of chemicals in the workplace.

Please call Barbara at Ext. 8-4453 to register or if you have any questions.

Almanac

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