

# University of Illinois

## BUDGET REQUEST FOR OPERATING AND CAPITAL FUNDS

Fiscal Year 1984



PREPARED FOR PRESENTATION TO THE  
BOARD OF TRUSTEES  
SEPTEMBER 16, 1982

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## PREFACE

The State of Illinois must improve its competitive position if it is to enjoy a productive and promising future and to do so, Illinois must have strong universities and colleges. The University of Illinois is a great university, a university of international reputation, a university of sound quality developed over many decades. Illinois higher education, in fact, is one of this state's strongest assets. That asset, however, can be squandered unless it is nurtured and properly supported and unless higher education's position among the state's funding priorities is increased.

Illinois higher education will not be able to recoup the losses of the last decade overnight, but recovery must begin. The FY 1984 budget request submitted by the University of Illinois is designed to begin that process. It is an advocacy budget, as it should be; and a realistic budget, as it must be.

The key element in the ability of the University of Illinois to compete in the academic world and to meet the needs of Illinois and society at large rests in our capacity to attract and retain top quality faculty and staff members and place in their hands the tools in the laboratories, libraries, and classrooms to do their job. It is in this context that competitive compensation is essential. Illinois took a step backward on that score in 1982-83 as it struggled to offer even a modest salary increase, an increase very likely to be at the bottom of those given by Big Ten universities. Given our earlier weak competitive position, it is essential that these more recent losses be recovered. Efforts to close the gap between current faculty and staff compensation levels and our goal of third in the Big Ten must continue if the quality of the University of Illinois is to be preserved over the long term.

The University has experienced serious losses in purchasing power over the last several years. The inability to cover price increases in general supplies and equipment has placed that portion of the University's budget under severe strain. That strain will intensify this year, and must be addressed. Utility rates will continue to rise faster than general inflation, particularly as natural gas prices are deregulated.

Urgent academic program needs must be met in FY1984. Consideration must be given to price increases for library acquisitions, recognizing that no allowance for the increased costs of books and materials was made this year. In the broader area of the University's academic program, a sound approach, in our judgment, is to set aside approximately 2 percent of the instructional base each year for academic program improvements. By contrast, no new program funds were available in FY1983. In virtually all program areas, support was reduced. This erosion must be halted.

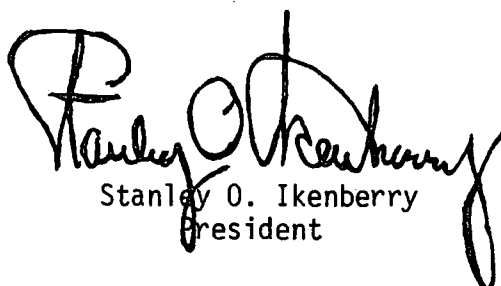
The FY1984 budget recommendations urge a special attack on the critical problems facing engineering education. Enrollment growth has strained engineering programs to the breaking point. As a stopgap measure, freshman admissions have been cut by 10 percent and may need to be cut further. These reductions, however, are counter to the public interest. They do not provide an answer for the many able and highly qualified Illinois residents who must now be denied access to these programs nor do they provide an answer to the long term needs of the Illinois economy. Funds are needed to employ additional faculty and staff; to improve salaries so as to avoid losing the top people we already have; to modernize equipment; and to remodel laboratory facilities.



A problem of substantial and growing proportions exists in the area of retirement funding. For the last two years, in order to help sustain the state's operating budget, the State Universities Retirement System has been funded at a level far below actuarial estimates of need and sound fiscal practice. This situation must be reversed. Revenues available from Illinois Building Authority payments--no longer required in FY1984--should be shifted dollar for dollar to the State Universities Retirement System. Such action would provide a \$20 million shot in the arm in FY1984 and combined with additional general revenue funds, would begin to restore the retirement system to sound fiscal health.

As to capital programs, the priorities continue to focus on maintaining existing facilities and commitments, meeting special needs, and moving ahead with the Food for Century III program as part of a broader high technology thrust aimed at long term academic recovery.

The University of Illinois is at a critical juncture. The combination of an improved economy, a strengthened tax base, and an increased priority position for higher education can provide the basis for recovery and enable the University of Illinois to serve its students, industry, agriculture, the professions, and the people of the State and Nation as we should. It is with this hope, and from this commitment, that I advocate and urge your support for these budget recommendations.

  
Stanley O. Ikenberry  
President

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PART I  
INTRODUCTION TO THE OPERATING AND CAPITAL BUDGET REQUEST  
FISCAL YEAR 1984

## FY 1984 OPERATING BUDGET REQUEST

### FY 1983 Funding Outcome

The fiscal difficulties which beset the University of Illinois--and all of higher education in the State with the completion of the FY 1983 budget have been well documented. Many of the root causes of those difficulties--a sluggish national and State economy, the expansion of public entitlement and assistance programs, which increase substantially in times of economic stress, and an FY 1982 budget for the State built upon revenue estimates which projected growth that did not materialize--were known as the FY 1983 budget process began more than a year ago. They were incorporated into early forecasts which sounded the alarm that in FY 1983, maintaining even a modest rate of budget growth would be difficult. As the process evolved, a further, unanticipated factor arose to compound the overall economic malaise which still affects the State. Only one year after enjoying substantial support relative to other State agencies and departments in the appropriation of General Revenue Funds, higher education was confronted with a substantial loss of priority in the allocation of General Revenue Funds for the current year.

The loss of priority is visible in the data in Table 1, which show that higher education lost some 1.1% of the base General Revenue Fund (GRF) level which it had achieved in FY 1982, while appropriations to other State agencies rose by 2.0%. A more dramatic view of what the FY 1983 budget has meant to higher education's decade-long priority is shown in Figure 1. As can be seen, a gradual erosion of higher education's share of the General Revenue Fund occurred from FY 1973 to FY 1981, with a drop from 13.9% to 12.8%. In the next two years however, the share dropped by another .5%, to 12.3%. The magnitude of the priority lost over the past decade perhaps can be better understood with the realization that the 1.6% loss in higher education's share of General Revenue Funds is the equivalent of \$132 million in FY 1983.

A close look at Table 1 reveals that even though the FY 1983 total GRF for higher education fell from FY 1982 levels, two of the components within higher education, the Illinois State Scholarship Commission (ISSC) and the State Universities Retirement System (SURS) actually had modest increases in

Table 1  
State of Illinois  
General Revenue Fund Appropriation  
FY 1982-FY 1983  
(Dollars in Millions)

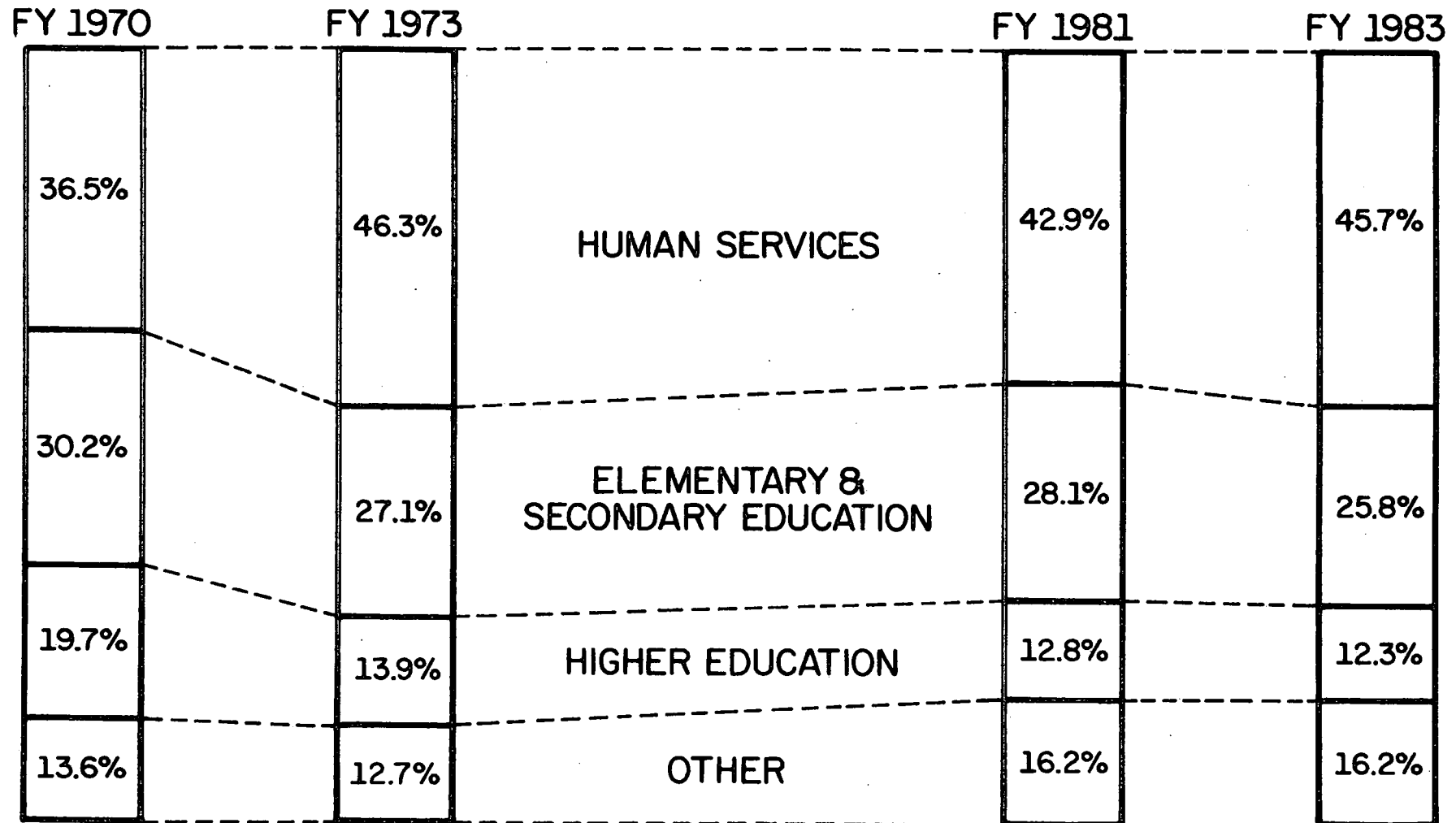
	<u>FY 1982</u>	<u>FY 1983</u>	<u>\$ Change</u>	<u>% Change</u>
Higher Education				
Universities	\$ 676.6	\$ 665.4	\$(11.2)	( 1.7%)
Community College	148.8	148.5	( .3)	( .2%)
ISSC	89.9	93.8	3.9	4.3%
Other*	31.2	30.6	( .6)	( 1.9%)
Retirement	44.3	48.1	3.8	8.5%
IBA	27.3	20.4	( 6.9)	(25.4%)
TOTAL	\$1,018.1 (12.6%)	\$1,006.8 (12.3%)	\$(11.3)	( 1.1%)
All Other Agencies	\$7,055.9 (87.4%)	\$7,195.2 (87.7%)	\$139.3	2.0%
Total State GRF	\$8,074.0 (100.0%)	\$8,202.0 (100.0%)	\$128.0	1.6%

\*Includes HECA, Board of Higher Education; Health Education Grants; and Financial Assistance to Private Institutions.



FIGURE 1

# DISTRIBUTION OF GENERAL REVENUE AND COMMON SCHOOL FUNDS AMONG PROGRAM SECTORS 1970 TO 1983



SOURCE: ILLINOIS STATE BUDGET

GRF, in effect forcing larger decreases in other segments of the higher education budgets. As can be seen, the largest dollar impact of the budget reduction came for universities.

Although the General Revenue Fund provides by far the largest share of operating support for Illinois higher education (85% in FY 1982; 83% in FY 1983), other sources of funds are available. Substantial increases in these funds helped, in part, to blunt the negative impact of the GRF reduction. Table 2 outlines the changes in other sources of funds for higher education, along with those for the General Revenue Fund. Note, for example, that for all universities appropriations from the Income Fund, comprised primarily of student tuition, rose by 16.5%. Appropriations to higher education from other sources such as the Agricultural Premium Fund, the Fire Prevention Fund, and the Real Estate Research and Education Fund grew by more than 30%. Unfortunately, each of these funds supports narrowly defined or specifically dedicated activities, and their resources are not available for general operations.

When all sources of funds are combined, the total FY 1983 budget for universities rose by about 1.5%, while total support for all higher education grew by nearly 2.0%. Quite obviously this growth was achieved for universities only by a shift in support from the share of operations borne by the State of Illinois to that borne by students who attend the universities.

Within the university sector of the higher education budget, the University of Illinois fared relatively well in comparison with other systems, as depicted in Table 3. Whereas the GRF appropriation for other systems combined dropped by 2.64%, that for the University of Illinois fell by only .06%. Appropriations from the Income Fund rose by 14.8% for other systems, and 19.8% for the University of Illinois. In addition, appropriations to the University of Illinois from "other" funds rose by nearly 14%. Overall, the University of Illinois FY 1983 operating budget from appropriated funds will be about 2.1% higher than that for FY 1982, while the total budgets for other systems combined are about 1.0% higher.

Table 2  
Comparison of FY 1982 and FY 1983 Appropriations for Higher Education  
by Sector and Source of Funds  
(Dollars In Thousands)

	Universities**	Community Colleges	ISSC	Other*	Subtotal	Ret.	IBA	Total
<b>GRF</b>								
FY 82 Appropriations	\$676,564.7	\$148,763.6	\$ 89,930.5	\$31,176.9	\$ 946,435.7	\$44,324.6	\$27,315.0	\$1,018,075.3
FY 83 Appropriations	665,425.4	148,474.3	93,806.9***	30,595.8	938,302.4	48,089.1	20,371.2	1,006,762.7
\$ Change	(11,139.3)	( 289.3)	3,876.4	( 581.1)	( 8,133.3)	3,764.5	(6,943.8)	( 11,312.6)
% Change	(1.65%)	( .19%)	4.31%	(1.86%)	(.86%)	8.49%	(25.42%)	(1.11%)
<b>Income Fund</b>								
FY 82 Appropriations	\$136,290.1	--	--	--	\$ 136,290.1	--	\$ 151.9	\$ 136,442.0
FY 83 Appropriations	158,771.2	--	--	--	158,771.2	--	151.9	158,923.1
\$ Change	22,481.1	--	--	--	22,481.1	--	--	22,481.1
% Change	16.50%	--	--	--	16.50%	--	--	16.48%
<b>Other Appropriations</b>								
FY 82 Appropriations	\$ 8,486.2	\$ 1,807.0	\$ 27,990.5	\$ 800.2	\$ 39,083.9	\$ 168.9	--	\$ 39,252.8
FY 83 Appropriations	9,350.3	1,695.0	40,419.3	-0-	51,464.6	166.2	--	51,630.8
\$ Change	864.1	( 112.0)	12,428.8	( 800.2)	12,380.7	( 2.7)	--	12,378.0
% Change	10.18%	(6.20%)	44.40%	(100.0%)	31.68%	1.60%	--	31.53%
<b>Total</b>								
FY 1982 Appropriations	\$821,341.0	\$150,570.6	\$117,921.0	\$31,977.1	\$1,121,809.7	\$44,493.5	\$27,466.9	\$1,193,770.1
FY 1983 Appropriations	833,546.9	150,169.3	134,226.2	30,595.8	1,148,538.2	48,255.3	20,523.1	1,217,316.6
\$ Change	12,201.9	(401.3)	16,305.2	(1,381.3)	26,728.5	3,761.8	(6,943.8)	23,546.5
% Change	1.49%	( .27%)	13.83%	( 4.32%)	2.38%	8.45%	( 25.28%)	1.97%

\*Includes HECA, BHE, Financial Assistance to Privates, and Health Education Grants

\*\*Excludes \$1.0 million in GRF to Univ. of Illinois for research parks, and \$212.7 in GRF to Board of Governors for building demolition.

\*\*\*Includes \$650.0 to move ISSC headquarters

Table 3  
Comparison of FY 1982 and FY 1983 Appropriations for University Systems  
(Dollars in Thousands)  
(Excludes Retirement and IBA Rentals)

	<u>Subtotal</u>	<u>University of Illinois</u>	<u>Grand Total</u>
GRF			
FY 82 Appropriations	\$346,716.4*	\$329,848.3**	\$676,564.7
FY 83 Appropriations	337,551.9	327,873.5	665,425.4
\$ Change	( 9,164.5)	( 1,974.8)	(11,139.3)
% Change	(2.64%)	(.06%)	( 1.65%)
Income Fund			
FY 82 Appropriations	90,305.4	\$ 45,984.7	\$136,290.1
FY 83 Appropriations	103,681.6	55,089.6	158,771.2
\$ Change	13,376.2	9,104.9	22,481.1
% Change	14.81%	19.80%	16.50%
Other Appropriations			
FY 82 Appropriations	\$ 2,434.4	\$ 6,051.8	\$ 8,486.2
FY 83 Appropriations	2,452.3	6,898.0	9,350.3
\$ Change	17.9	846.2	864.1
% Change	.74%	13.98%	10.18%
Total Funds			
FY 1982 Appropriations	\$439,456.2*	\$381,884.8**	\$821,341.0
FY 1983 Appropriations	443,685.8	389,861.1	833,546.9
\$ Change	4,229.6	7,976.3	12,205.9
% Change	.96%	2.09%	1.49%

\*Excludes \$212.7 in GRF to demolish three buildings

\*\*Excludes \$1.0 million in GRF for lease/purchase of Chicago Medical School Building

Note: In addition to these changes in State Appropriations, the Nonappropriated portion of the University of Illinois FY 1983 budget is projected to increase by 10.8%. For all sources of funds combined, and including retirement and GRF capital funds, the University's budget will grow by 6.2% for FY 1983.

When all sources of funds for the University of Illinois are taken into consideration, the University's total FY 1983 operating budget will increase by 6.2%, including retirement and capital GRF revenues. The University's total FY 1983 budget will reach \$815.2 million, as against the FY 1982 total of \$767.8 million.

#### FY 1983 Budget Impact on University of Illinois

The FY 1983 appropriated funds increment of 2.1% for the University of Illinois is the lowest in the past decade by a wide margin, as shown in Figure 2. Operationally, the impact is much more significant than the graph reveals. For a number of years, the University has followed the practice of granting annual salary increases which take effect at the beginning of the academic year (August 21 in Urbana-Champaign; September 1 for Chicago) rather than at the beginning of the fiscal year. This practice has the effect of requiring spending commitments for the first two months of a fiscal year which are geared to the prior year's salary increase rates--a situation which is termed "annualization" of salary increases.

Given FY 1982 salary increases which averaged 10%, the University entered FY 1983 with salary commitments \$6.2 million above the personal services funds which were available in FY 1982. Unfortunately, the appropriation approved by the General Assembly and the Governor resulted in a \$1.9 million net reduction of personal services funds, independent of the mid-year salary increase monies provided for FY 1983.

The combination of a \$6.2 million commitment and a \$1.9 million reduction in base funds presented the University with roughly an \$8 million potential shortfall for FY 1983--about 2.7% of the total FY 1982 personal services base. As was the case in FY 1982, when a portion of the funds needed to grant salary increases were generated internally, the University was forced to reduce the number of budgeted personnel positions, to leave unfilled a number of vacancies which occur each year due to retirements and resignations, and, in some cases, to reduce current staff. This process will continue throughout FY 1983, to insure that the personal services dollars which are available are adequate to meet actual salary and wage requirements. As was also the case

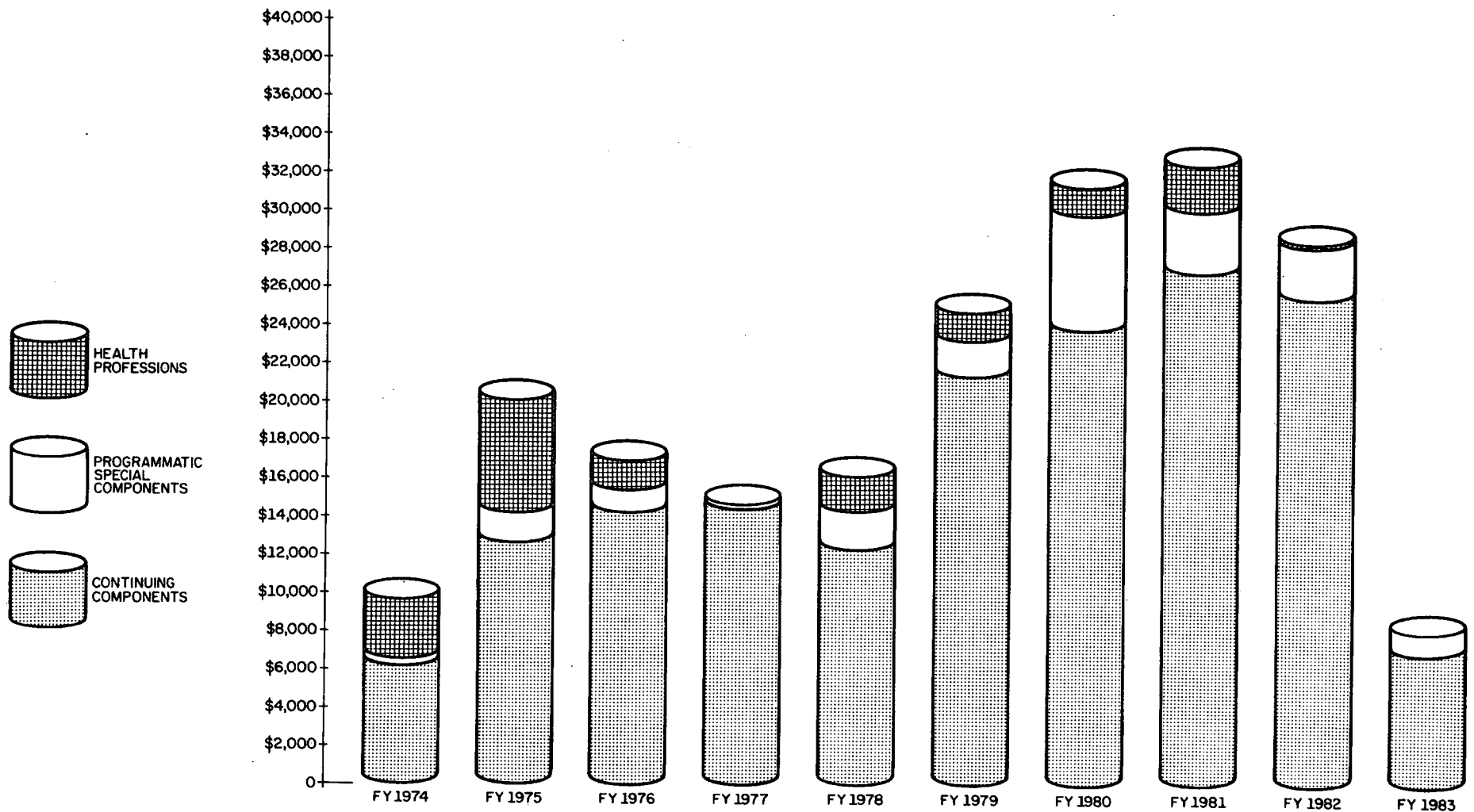
FIGURE 2

## FY 1974-83 STATE INCREMENTAL FUNDS RECEIVED BY THE UNIVERSITY OF ILLINOIS

(GENERAL REVENUE, INCOME AND SPECIAL FUNDS EXCLUDING RETIREMENT, IBA AND CAPITAL GRF)

(DOLLARS IN THOUSANDS)

COMPONENT	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983
PREVIOUS YEAR'S BASE	\$188,698.0	\$198,381.5	\$218,424.5	\$235,375.1	\$250,019.4	\$265,925.8	\$290,681.4	\$321,158.3	\$353,550.3	\$381,884.9
NET INCREMENT	9,683.0	20,043.1	16,950.7	14,644.3	16,140.0	24,755.6	31,279.3	32,391.9	28,334.6	7,976.3
NET INCREMENT AS A PERCENT OF PREVIOUS YEAR'S BASE	5.1%	10.1%	7.8%	6.2%	6.5%	9.3%	10.8%	10.1%	8.0%	2.1%
CONTINUING COMPONENTS	6,191.3	12,680.0	14,230.7	14,488.0	12,347.1	21,422.9	23,803.4	26,840.1	25,461.0	6,913.0
PERCENT OF TOTAL INCREMENT	63.9%	63.3%	84.0%	98.9%	76.5%	86.5%	76.1%	82.9%	90.4%	86.7%
PROG. & SPEC. COMPONENTS	352.5	1,586.1	1,220.0	156.3	2,001.4	1,859.7	6,008.4	3,242.0	2,733.2	1,138.3
PERCENT OF TOTAL INCREMENT	3.6%	7.9%	7.2%	1.1%	12.4%	7.5%	19.2%	10.0%	9.6%	14.3%
HEALTH PROFESSIONS	3,139.2	5,777.0	1,500.0		1,791.5	1,473.0	1,467.5	2,309.8	140.4	-75.0
PERCENT OF TOTAL INCREMENT	32.4%	28.8%	8.8%		11.1%	6.0%	4.7%	7.1%	0.5%	-1.0%



last year, monthly monitoring of staff levels will continue for all sources of funds to provide adequate lead time for any further personnel actions necessary to insure that the University is able to live within its means throughout the year.

Even when the potential \$8 million personal services shortfall has been overcome, FY 1983 will be an extremely lean year. Funds to provide a 4% salary increase at mid-year were appropriated by the General Assembly, but the amount was reduced to a level which would fund increases averaging 3% for 90% of the personal services base, rather than the customary 95% of base. As discussed in greater detail in the Compensation Section, the University's FY 1983 salary increase is expected to be near the bottom of the increases granted in the Big Ten. It is possible that special efforts will be made to supplement FY 1983 salary increase funds, raising the overall average to the 4.0-4.5% range in order to offset a portion of the negative impact of such unfavorable compensation advances.

Other areas of the FY 1983 budget will be similarly constrained. The utilities increment was funded at only 80% of anticipated needs, requiring further efforts to conserve energy simply to "break even" for the year. Such efforts must come on top of conservation efforts already implemented and in addition to those which were anticipated when the original utilities needs were determined.

No funds will be available to meet price increases for the goods and services which support the University's overall instructional and research efforts. No equipment or library acquisitions price increase funds will be available, even though price increases in these and other specialized commodities and supplies areas have been running at double-digit levels for several years.

Although the IBHE budget recommendations indicated that some \$3.4 million in "program improvement/maintenance" funds were available within the FY 1983 budget, roughly in proportion to the funds generated by differential tuition increases, all of those funds were required to help offset the \$8 million

personal services shortfall identified above. As a result there were virtually no program funds available in the FY 1983 budget.

On the heels of a year in which personnel base reductions in excess of 1% had already been made, and continuing nearly a decade-long period of general belt-tightening as annual budget increments lagged well behind inflation, the budget constrictions imposed in FY 1983 are especially severe. Enrollment demand for University of Illinois programs has never been higher; and those budget constrictions will force an increase in workloads and an inevitable reduction in enrollment opportunities in some of the highest demand areas. Enrollments in medicine, veterinary medicine, and engineering have been reduced this fall. Reduction of service levels, especially in these key areas, is never an attractive alternative, but the realities of diminished budgetary support made that option the only one possible.

#### FY 1984 Revenue Prospects

Following a nearly two-year period in which the economic picture has been bleak, there are some signs for optimism at the outset of the FY 1984 budget process. Based upon current information, the revenue estimates upon which the FY 1983 State budget is based appear to be in line with actual receipts, in contrast to what occurred last year. Some evidence of economic recovery has appeared recently, and major econometric forecasting firms have projected both a decline in rates of inflation and an increase in real GNP. Tax revenues seem likely to grow; an 8% increase for Illinois tax revenues appears now to be a realistic estimate for planning purposes. Even without changes in the State's tax structure, a growth rate of 8% would produce approximately \$600 million in new revenues.

With the prospect for some increase in available new revenues for FY 1984, strong emphasis must be placed upon returning higher education's priority in the allocation of those resources at least to the level of approximately 13% which had been achieved by the end of the 1970's. The University has taken every possible step to insure that the negative effects of the diminished priority for higher education in FY 1983 can be blunted: --Tuition increases have been substantial in the past few years; the program of



differential tuition, initiated to provide a source of program enhancement funds, was successful in its first year, but for FY 1983, those funds had to be used for continuing operations. --Staff reductions have been made, and more are likely to follow during FY 1983, but reduction in service levels is precisely the wrong response to continued high enrollment demand. --The University, in Chicago, in Urbana-Champaign, and in its presence throughout the State has the capacity to assist Illinois in bolstering the economic activity associated with many of the "spin-off" enterprises related to research and instructional efforts, especially in the so-called "high technology" areas. But that assistance simply cannot come at a time when several of the programs in the "high tech" areas, such as engineering, veterinary medicine, and the health professions are forced to reduce the scope of their activities because of inadequate funding; or when the lack of funds to meet inflation cost increases in equipment and supplies forces additional reductions in activities. Adequate base level support for these activities must be secured before meaningful new or expanded efforts can be undertaken.

All of these conditions argue persuasively that higher education's funding priority--and that for the University of Illinois--must recover from the downward spiral which has accelerated in the past two years.

Beyond the encouragement which comes from the prospect of a somewhat healthier economy in FY 1984, the possibility for significant additional revenues resulting from tax reform and revenue enhancement measures also exists. The Governor has appointed an advisory group of Illinois citizens to examine the need for additional revenues and the possible ways for generating them.

Even if no new revenue measures are enacted, however, FY 1984 presents a one-time opportunity to make a major shift of resources from one purpose to another within the higher education budget. About \$20.5 million now required for rental payments to the Illinois Building Authority to amortize capital facilities will no longer be required after the current year. As discussed in Appendix II to this document, one of the most pressing needs confronting higher education revolves around growing retirement funding requirements. The funds freed by the IBA could be redirected into the SURS budget, in an effort to return the overall level of funding to the "Gross Payout" level as rapidly

as possible. In any case the needs of higher education are so great that the reallocation of IBA funds within the higher education budget is absolutely mandatory.

#### Development of the FY 1984 Incremental Operating Budget Request

Given the dismal outcome of the FY 1983 budget, on the one hand, and the prospects for a somewhat more substantial amount of available new revenue in FY 1984, an incremental operating budget request has been constructed around the following major premises.

-- Restoration of base funding levels must be achieved to avoid further reductions in service levels. It will not be adequate simply to keep pace with rising costs, since so much ground now has been lost. To secure restoration a budget request which is somewhat larger than in "normal" years is an absolute necessity.

-- Top priority must be assigned to faculty and staff compensation if the University is to stand a chance of retaining the first-rank staff which it has been able to recruit over the years and is to continue to attract new staff of the same high caliber. FY 1983's compensation increases, if not followed by a substantially larger increase in FY 1984, will send the message that Illinois is not willing to sustain a first-rate University.

-- The other segments of the so-called "continuing components" must comprise a major share of the total budget effort. Adequate price increases for utilities, library acquisitions, and other goods and services are imperative. Sufficient funds to operate new facilities--especially key research facilities such as the Veterinary Medicine Basic Sciences Building--are necessary if these facilities are to be fully utilized as intended.

-- Unusual efforts must be devoted to securing funds beyond normal price increases to begin to alleviate the cumulative equipment deficiency which has plagued the University for nearly a decade.

-- Programmatically, special attention can be focussed on the University of Illinois' unique ability to aid the State in a direct way in the enhancement of its economic base by attracting new industries associated with the "high technology" efforts in the sciences and engineering. Some progress has already been made in this area, with the appropriation of funds to secure capital facilities in Chicago. The lifeblood of any major contribution which

the University might make in the "high tech" area, however, will be the strengthening of academic programs in the sciences and engineering.

--At least modest growth in general program areas must also be achieved to insure the enhancement of academic efforts in areas less visible but no less important or central to the mission of a comprehensive university.

Within this context the incremental operating budget request which appears in Table 4 and the specific programs identified in Table 5 were developed. They have been approved by the University Planning Council and reviewed and approved by the Chancellors of each campus. The highlights of the FY 1984 incremental operating budget request include the following:

-- Compensation increases totalling 12.5%, plus annualization of the mid-year increases granted in FY 1983. The FY 1984 increases include the following components:

1) a "regular" increase set at 6.5%, to match the inflationary increases now projected for FY 1984 by the major econometric forecasting firms;

2) a "market recovery" component of 2.0%, required to recover the ground which the University lost in FY 1983 to the average increase anticipated for other Big Ten institutions;

3) a 4.0% increase necessary to close the gap to third place in average salaries which is projected for FY 1983.

-- price increase funds set at 6.5% for commodities, supplies and services items, plus a 2.0% supplement to help recover from the erosion of the expense base, especially in such critical areas as laboratory supplies, and other instructional commodities.

-- utilities cost increases of 20% which will only match anticipated price escalations, especially as the deregulation of natural gas continues.

-- library acquisitions increases of 15% required to meet expected price increases in this specialized area.

-- equipment replacement funds of \$2.0 million, excluding engineering equipment, to begin the reduction of the massive equipment deficiency which now threatens virtually all departments.

Table 4  
FY 1984 Incremental Operating Budget Request  
(Dollars in Thousands)

	<u>Regular Request</u>	<u>Market Recovery</u>	<u>Total</u>
I. Continuing Components			
A. Compensation Improvement	\$ 19,833.7	\$ 14,578.2	\$ 34,411.9
1. Annualization (3%)	( 4,040.6)		( 4,040.6)
2. Regular (6.5%)	(15,793.1)		(15,793.1)
3. Market Recovery (2.0%)		( 4,859.4)	( 4,859.4)
4. Achieve Third Place (4.0%)		( 9,718.8)	( 9,718.8)
B. General Price Increases	2,930.9	901.8	3,832.7
1. Regular (6.5%)	( 2,930.9)		( 2,930.9)
2. Market Request (2.0%)		( 901.8)	( 901.8)
C. Utilities Price Increase (20%)	6,404.8		6,404.8
D. Library Price Increase (15%)	806.1		806.1
E. O & M New Facilities	1,616.9	526.3	2,143.2
1. Regular Request	( 1,436.3)		( 1,436.3)
2. Market Recovery		( 526.3)	( 526.3)
3. Affiliated Hospitals	( 180.6)		( 180.6)
F. Worker's Compensation	118.7		118.7
Subtotal, Continuing Components	\$ 31,711.1	\$ 16,006.3	\$ 47,717.4
% of FY 83 Base*	( 8.13%)	( 4.11%)	( 12.24%)
II. Programmatic Components			
A. Expanded/Improved Programs	\$ 3,800.0		\$ 3,800.0
B. Equipment Replacement	2,000.0		2,000.0
C. Special Engineering Program	6,000.0		6,000.0
Subtotal	\$ 11,800.0		\$ 11,800.0
% of FY 83 Base	( 3.03%)		( 3.03%)
III. Special Services/Funding			
A. Library Computer System	300.0		300.0
B. County Board Matching	672.7		672.7
C. Cooperative Extension Service	200.0		200.0
D. Fire Service Institute	75.4		75.4
E. Real Estate Research	31.0		31.0
F. Div. of Services for Crippled Children	391.3		391.3
G. Chicago Summer Session	400.0		400.0
Subtotal	\$ 2,070.4		\$ 2,070.4
% of FY 83 Base	( .53%)		( .53%)
IV. Total FY 1984 Request	\$ 45,581.5	\$ 16,006.3	\$ 61,587.8
% of FY 83 Base	( 11.69%)	( 4.11%)	( 15.80%)

\*FY 1983 Operating Base = \$389,861.1, excluding Retirement and IBA Rentals

Table 5  
FY 1984 Expanded and Improved Programs  
(Dollars in Thousands)

UNIVERSITY OF ILLINOIS - CHICAGO

University Center

A. Science and Technology Programs	\$ 100.0
B. High Demand Student Enrollment	435.0
Sciences/Mathematics (\$135.0)	
Architecture ( 70.0)	
Business ( 230.0)	
C. Graduate Student Support	100.0
D. Organized Research Development	125.0
Urban Transportation (\$50.0)	
Urban Economic Development ( 50.0)	
Humanities Institute ( 25.0)	
Subtotal, University Center	\$ 760.0

Health Sciences Center

A. Statewide Health Professions Education	\$ 500.0
B. Interdisciplinary Studies in Health Care of the Aged	390.0
C. Clinical Pharmacology	250.0
Subtotal, Health Sciences Center	\$1,140.0

UNIVERSITY OF ILLINOIS - URBANA-CHAMPAIGN

A. Veterinary Medicine	\$ 587.6
B. College of Law	169.0
C. Response to Changing Student Demand	578.9
D. Graduate Student Support	364.5
Subtotal, Urbana-Champaign	\$1,700.0

GENERAL UNIVERSITY

A. Public Service Programs, Region 2	\$ 150.0
B. State/University Research Resources Program	50.0
Subtotal, General University	\$ 200.0

Total Expanded/Improved Programs	\$3,800.0
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-- \$6.0 million in funds to bolster the University's programs in engineering, spearheading an effort to rejuvenate those high quality programs while at the same time expanding the opportunity for the State of Illinois to enhance its economic environment.

-- \$3.8 million in program funds to expand and improve the academic program efforts in such major areas as veterinary medicine, business administration and commerce, law, the health professions, the health care of the aged, and others.

-- some \$2.1 million in special services/funding programs which include those having dedicated sources of funding other than General Revenue or which are conducted by the University under direct legislative mandate.

In total, the FY 1984 request is \$61.6 million, an increase of 15.8% over the FY 1983 operating base of \$389.9 million. More than three-quarters (77%) of the request is devoted to "continuing components"--those activities which are necessary just to maintain existing program levels. Slightly less than 20% of the request is focussed upon expanded programs and equipment replacement, while the final 3% is devoted to the special services/ funding components.

Viewed another way, the FY 1984 request really represents two phases. The first totals \$45.6 million and represents a relatively modest request for additional funds when compared to recent budget requests (the FY 1983 request totaled \$48.7 million; that for FY 1982 totalled \$48.0 million). The second FY 1984 phase represents \$16 million in "market recovery" funds which consist of base funding requirements related to the inadequacy of the FY 1983 appropriation level. Under these circumstances the 15.8% overall increase is both reasonable and realistic as a statement of the University's highest priority budget needs as the formal FY 1984 budget process begins.

The University's total operating budget from appropriated funds for FY 1983 is \$389,861,100, excluding Retirement, and IBA rental payments, and capital GRF. If the FY 1984 incremental request were appropriated as presented, the FY 1984 operating budget would exceed the \$450 million level, with a total of \$451,448,900 in State-appropriated operating funds.

### Additional Budget Needs

As described earlier, it is possible that new revenue-generating measures may be implemented early enough to produce revenue levels for FY 1984 which would be well above the recent norm. Throughout the FY 1983 budget cycle in Illinois, the need for serious examination of ways to build the State's revenue base to a level necessary to maintain the services required in a major industrial and agricultural State was recognized by those in the legislative and executive branches. The Governor has taken the step of appointing an advisory committee of key Illinois citizens to study the issue in depth. It is speculative to attempt to predict whether such revenue expansion measures will indeed be brought forth and, if so, how much additional revenue they will produce. Nevertheless, the fact that issues of revenue adequacy are being raised in serious ways makes it appropriate for the University to demonstrate its full range of budget needs for review by those who are seeking to determine what an adequate revenue level for the State might be, and what steps can be taken to reach that level.

The main body of this document describes the most basic budget demands which confront the University. It is important to understand that a major research institution such as the University of Illinois must deal with a range of issues in any budget request. All available new funds cannot be concentrated in a single area, no matter how important it may be, for to leave other areas unattended is to invite deterioration in the overall operation of the University and distortion of its mission. Regardless of average faculty salaries, for example, first-quality teachers and scholars simply cannot be attracted to or retained in an institution with obsolete equipment, with inadequate library resources, with facilities which have decayed beyond repair, and with no funds available for program advancement.

The need to spread available resources over a range of budget requirements means that the total requirement in any one area often cannot be met in a single year. Those total needs continue, until a time when revenues are adequate to address them. In this context, several specific areas have been identified as the most important budget components where unmet resource requirements will exist, even if the full budget request were approved and appropriated. These areas are described in Appendix I, with indications of the amounts necessary to meet their resource requirements, should the opportunity become available.

### The Enrollment Picture

Much has been written about the potential for significant declines in college and university enrollments, due to population decreases in the traditional college-age group of 18-21 year olds. While this situation will affect higher education in general, the University of Illinois continues to be in a position in which demand for programs at both the Chicago and Urbana-Champaign campuses remains strong, and appears likely to do so for the foreseeable future.

Enrollment levels are of major concern to the University, however, from the perspective of insuring adequate resources to deliver the quality of instruction which students, their parents, and the people of Illinois deserve and have come to expect. Demand for admission to several programs in Chicago and Urbana-Champaign has been unusually great; engineering and commerce and business administration are two prime examples, with enrollment levels in the sciences and mathematics also showing extremely strong demand. Applications for entrance to the professional schools of law, medicine, and veterinary medicine continue at historically high rates.

For a number of years, the University has sought to add faculty and staff members in response to shifting enrollment patterns and ever-growing demand. Adequate funds to do so have not been appropriated; and the only response available to the University has been to reduce enrollment levels in the highest demand areas, to insure that those who are admitted receive a first-quality education. Entering class enrollments in engineering at Chicago and Urbana-Champaign have been reduced by 10%; further reductions may be required. Commerce and business administration may well become the next area to require reductions if incremental funds are not made immediately available. Enrollments in medicine and veterinary medicine have also been reduced, since funding declines in State support have been compounded by significant losses in Federal capitation funds.

Table 6 provides a review of overall enrollment patterns and projections. Note that in Chicago, the University Center projects the stabilization of headcount enrollment at approximately the 20,700 level. Should adequate funding for engineering and business administration not be available, this "steady state" enrollment level may be reduced by 300-400 students.



Table 6  
FALL TERM ON-CAMPUS HEADCOUNT ENROLLMENT  
UNIVERSITY OF ILLINOIS

	Actual			Projected				
	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987
	HDCT	HDCT	HDCT	HDCT	HDCT	HDCT	HDCT	HDCT
<u>Chicago University Center</u>								
Lower Division	9,375	9,564	9,027	8,850	8,785	8,720	8,605	8,510
Upper Division	7,661	7,975	7,966	7,710	7,600	7,490	7,380	7,270
Total Undergrad	17,036	17,539	16,993	16,560	16,385	16,210	15,985	15,780
GI	2,434	2,593	2,736	3,000	3,225	3,450	3,620	3,800
GII	815	869	871	950	1,000	1,050	1,105	1,130
Total Grad	3,249	3,462	3,607	3,950	4,225	4,500	4,725	4,930
Total - University Center	20,285	21,001	20,600	20,510	20,610	20,710	20,710	20,710
<u>Health Sciences Center</u>								
Lower Division	293	296	243	235	245	245	245	245
Upper Division	1,375	1,315	1,271	1,219	1,158	1,152	1,146	1,146
Total Undergraduate	1,668	1,611	1,514	1,454	1,403	1,397	1,391	1,391
Medicine	1,385	1,388	1,374	1,361	1,341	1,332	1,324	1,324
Dentistry	579	615	607	609	563	544	544	544
Dental Post Graduates	49	48	49	49	49	49	49	49
Pharm.D.	--	10	13	15	15	15	15	15
Total Professional	2,013	2,061	2,043	2,034	1,968	1,940	1,932	1,932
GI	556	520	593	560	602	618	624	631
GII	230	236	242	238	244	251	257	263
Total Graduate	786	756	835	798	846	869	881	894
Residents and Interns	456	483	483	483	483	483	483	483
Total (Excludes resi- dents and Interns)	4,467	4,428	4,392	4,286	4,217	4,206	4,204	4,217
Total - Health Sci. Ctr.	4,923	4,911	4,875	4,769	4,700	4,689	4,687	4,700
<u>Urbana-Champaign</u>								
Lower Division	13,434	13,182	12,900	13,170	12,700	12,500	12,400	12,400
Upper Division	12,693	13,296	13,400	13,232	13,200	12,900	12,600	12,600
Total Undergraduate	26,127	26,478	26,300	26,445	25,900	25,400	25,000	25,000
Law	613	615	622	625	621	621	621	621
Veterinary Medicine	340	356	350	348	331	344	368	392
Total Professional	953	971	972	973	952	965	989	1,013
GI	3,373	3,497	3,497	3,232	3,425	3,375	3,375	3,375
GII	3,923	3,846	4,086	4,100	4,025	3,975	3,975	3,975
Total Graduate	7,296	7,343	7,583	7,332	7,450	7,350	7,350	7,350
Total - Urbana-Champaign	34,376	34,792	35,152	34,750	34,302	33,715	33,339	33,363
<u>GRAND TOTAL</u>	59,128	60,221	60,144	59,546	59,129	58,631	58,253	58,290
University of Illinois (Excludes residents and interns)								
<u>GRAND TOTAL -</u> University of Illinois	59,584	60,704	60,627	60,029	59,612	59,114	58,736	58,773

Note also that as has been the case for the past several years, the mix of students at the University Center continues to shift from undergraduate to graduate.

As noted earlier, enrollments in many of the health professions have been reduced due to funding losses, and it is not surprising to note the overall drop in total enrollment levels at the Chicago Health Sciences Center. Enrollment targets in medicine have been reduced to a level which will attain 3315 students per class (a total of 1,324 per year by FY 1986). Dentistry enrollments also have been reduced from 165 to 136 for the entering class (a total of 544 per year by FY 1985). Undergraduate enrollments are also projected to decline slightly, while graduate enrollments are expected to continue a moderate growth pattern. Again, these enrollment declines do not result from decreases in demand for health professions programs, but rather from the reduced Health Sciences Center funding support and the corresponding need to reduce service levels. Although FY 1983 classes at the Health Sciences Center had not begun at the time this document was printed, projections indicate a total enrollment level roughly equal to that achieved in FY 1980 (an FY 1983 projection of 4,913 as against an FY 1980 total of 4,923).

At Urbana-Champaign demand for all programs continues to be extremely strong. For some time the campus has had the objective of achieving an undergraduate enrollment of 25,000 and a graduate enrollment of 7,350 by a gradual reduction in existing enrollment levels. Within this general objective, specific enrollment cuts in engineering and veterinary medicine have been required due to serious funding problems. If sufficient incremental funds are made available, enrollment levels in those programs can be restored; if not, further reductions may be necessary.

Based upon preliminary FY 1983 enrollment data, it appears that the Urbana-Champaign campus will experience a small planned reduction in total enrollment, and beginning the progress towards its eventual goal of 32,350 total enrollment.

## FY 1984 CAPITAL BUDGET REQUEST

The FY 1984 Capital Budget Request is comprised of several components: Regular Capital Improvements, Energy Conservation/Fuel Conversion, and Food for Century III. The Regular Capital Improvements component consists of those projects necessary to support the University's ongoing programmatic activities. The Energy Conservation/Fuel Conversion component is a group of projects designed to control accelerating utilities expenditures. Projects included in the Food for Century III component comprise the initial year of a two-year program designed to complete the "critical mass" of facilities needed to enhance the University's food production research capabilities.

### Regular Capital Request

The University's Regular Capital Budget Request for FY 1984 is \$20,568,400. This request contains projects designed to: (1) remodel and renovate facilities to accommodate changing academic programs, (2) maintain the structural integrity of existing facilities, (3) upgrade building systems, and (4) provide special-purpose facilities which cannot be obtained through building renovation. A summary of the FY 1984 capital projects in priority order is presented in Table 7.

Emergency projects and major remodeling and planning for major remodeling projects are a primary focus for FY 1984. The roof resurfacing at Peoria School of Medicine and installation of a hazardous waste incinerator at the Health Sciences Center must be accomplished in a timely manner to avoid potential health and safety hazards. The remodeling projects have been designed to address changing programmatic needs or to improve the capabilities of building systems to provide a suitable environment for modern instruction. Two projects essential to implementing major remodeling improvements at the Chicago University Center Library are high priorities in the FY 1984 Capital Budget Request.

Examples of other high-priority major remodeling projects include planning the air conditioning of the Pharmacy Building and remodeling the Hospital Addition at the Health Sciences Center, continued remodeling of the

TABLE 7  
UNIVERSITY OF ILLINOIS  
FY 1984 CAPITAL BUDGET REQUEST PRIORITY LIST

Priority Number	Campus	Project	Budget Category	Project Cost	Cumulative Total	Chicago- University Center	Chicago- Health Sciences Center	Urbana- Champaign
1	UIC-HSC	Roof Replacement-Peoria School of Medicine	REMD	\$ 202,900	\$ 202,900		\$ 202,900	
2	UIC-HSC/UIC-UC	Hazardous Waste Incinerator	BLDG	350,000	552,900		552,900	
3	UIC-UC	Library Improvements	PLAN	327,900	880,800	\$ 327,900		
4	UIC-UC	Relocate Office of Admissions & Records	REMD	1,079,100	1,959,900	1,407,000		
5	UIUC	Library Sixth Stack Addition	EQUIP	30,000	1,989,900			\$ 30,000
6	UIUC	English Building Renovation	REMD	2,630,000	4,619,900			2,660,000
7	UIC-HSC	Pharmacy Building Remodeling	PLAN	375,000	4,994,900		927,900	
8	UIC-HSC	Hospital Addition Remodeling	REMD	1,970,000	6,964,900		2,897,900	
9	UIC-UC	Electrical Upgrade - Roosevelt Road Bldg.	REMD	501,700	7,466,600	1,908,700		
10	UIUC	Auditorium Remodeling	PLAN	150,000	7,616,600			2,810,000
11	UIC-UC	SR <sup>3</sup> - I	REMD	913,600	8,530,200	2,822,300		
12	UIC-HSC	SR <sup>3</sup> - I	REMD	1,857,100	10,387,300		4,755,000	
13	UIUC	SR <sup>3</sup> - I	REMD	2,297,000	12,684,300			5,107,000
14	UIUC	SR <sup>3</sup> - I Equipment	EQUIP	174,000	12,858,300			5,281,000
15	UIUC	Animal Science Lab Chilled Water Line	UTIL	252,000	13,110,300			5,533,000
16	UIUC	Pilot Training Facility	BLDG	1,393,900	14,504,200			6,926,900
17	UIUC	Pilot Training Facility	UTIL	63,000	14,567,200			6,989,900
18	UIC-UC	SR <sup>3</sup> - II	REMD	1,328,300	15,895,500	4,150,600		
19	UIC-HSC	SR <sup>3</sup> - II	REMD	2,134,200	18,029,700		6,889,200	
20	UIUC	SR <sup>3</sup> - II	REMD	2,236,700	20,266,400			9,226,600
21	UIUC	SR <sup>3</sup> - II Equipment	EQUIP	302,000	20,568,400			9,528,600

English Building and planning the remodeling of the Auditorium at the Urbana-Champaign campus, and upgrading the electrical system of the Roosevelt Road Building at the Chicago University Center. An equipment request for the Library Sixth Stack Addition will provide furnishings for the carrels and study areas.

As in past years, the University is requesting Space Realignment, Renewal, and Replacement (SR<sup>3</sup>) projects for FY 1984. An important tenet of the SR<sup>3</sup> concept is that for a campus as a whole, minor remodeling work will be required on an annual basis to preserve the functional and structural integrity of campus buildings. Specific projects vary from year to year, but some remodeling and renovation must be accomplished each year. Since no State funds were appropriated for FY 1983 SR<sup>3</sup> projects, the need for minor remodeling at each campus is critical in FY 1984.

Although the University has emphasized remodeling projects for FY 1984, there are cases when it is not possible to meet physical facilities needs through remodeling. The Pilot Training Facility is requested to initiate replacement of a building which has deteriorated beyond repair. Installation of a chilled water line from the Library Air Conditioning Center to the Animal Sciences Laboratory will provide a more efficient alternative to the current air-conditioning system which is about to fail.

#### Energy Conservation and Fuel Conversion

The University's Energy Conservation/Fuel Conversion group received initial support from the State in FY 1981. Funds have been appropriated for the conversion of Abbott Power Plant to burn Illinois coal and for a number of smaller conservation projects. Once completed, these projects will benefit the University and the State by helping to control the rising cost of energy.

The FY 1984 request for Energy Conservation/Fuel Conversion projects contains essentially those projects identified in the FY 1983 request for which funding was deferred. The FY 1984 request consists of thirty-four energy conservation projects (\$8,831,300) and two fuel conversion projects. All energy conservation and fuel conversion projects have a payback period conservatively estimated at less than 7.5 years. Table 8 presents a summary of the FY 1984 energy conservation projects in priority order.

TABLE 8  
FY 1984 ENERGY CONSERVATION REQUEST  
PROJECT PRIORITY LIST  
ALL UNIVERSITY

Priority	Campus	Project	Payback	Project Cost	Cumulative Total
1	UIC-UC	Automatic Light Dimming Systems - Main Library	1.09	\$ 147,000	\$ 147,000
2	UIC-UC	Install Reverse Osmosis Deionization System - SEL	1.24	115,800	262,800
3	UIC-HSC	Install Reverse Osmosis Deionization System - MSA	1.29	166,400	429,200
4	UIC-HSC	Fan Volume Reduction - Dentistry Building	1.30	40,800	470,000
5	UIC-UC	Fan Volume Reduction - Art & Architecture Building	1.31	63,000	533,000
6	UIC-HSC	Supplementary Cooling System for 1st Floor Lab - Pharmacy Building	1.33	58,700	591,700
7	UIC-UC	Install Modular Chillers, Night Temp. Setback & Modular High-Efficiency Boilers - Peoria Street Building	1.65	144,800	736,500
8	UIC-HSC	Modify HVAC System - Rockford School of Medicine	1.81	125,300	861,800
9	UIUC	Central Supervisory Control - 16 Buildings	1.89	520,000	1,381,800
10	UIUC	Ventilation System Retrofit - Morrill Hall	1.94	535,000	1,916,800
11	UIC-HSC	Install Auxiliary Reciprocating Chiller - Peoria School of Medicine	2.54	65,300	1,982,100
12	UIUC	Domestic Hot Water Retrofit - Six Buildings	2.67	48,300	2,030,400
13	UIUC	Air Conditioning System Revisions - Law Bldg.	3.01	243,100	2,273,500
14	UIC-HSC	Modify Fan System - Nursing Building	3.20	202,400	2,475,900
15	UIUC	Resource Recovery Plant	3.20	1,900,000	4,375,900
16	UIUC	Temperature Control Remodeling & Replacement - 12 Buildings	3.40	1,079,100	5,455,000
17	UIUC	Energy Use Efficiency Improvement - Morrill Hall	3.73	194,000	5,649,000
18	UIUC	Reheat Systems Zone Control - 14 Buildings	3.73	391,700	6,040,700
19	UIUC	Conversion to Central Fan System - Armory	3.80	81,300	6,122,000
20	UIUC	Conversion from Cast Iron to Fin Tube Radiation - Animal Science	3.85	297,000	6,419,000
21	UIUC	Install Air Curtains Above Entryways - Three Buildings	4.04	44,000	6,463,000
22	UIUC	Summer-Winter Ventilation Rate - Three Buildings	4.10	38,500	6,501,500
23	UIUC	Conversion to Zoned Ventilation - Arts & Design Building	4.77	194,900	6,696,400
24	UIUC	Radiation Zone Control - Seven Buildings	4.83	99,100	6,795,500
25	UIUC	Pipe Insulation - Electrical Engineering Building	4.89	31,800	6,827,300
26	UIUC	Reheat Systems Zone Control - 11 Buildings	4.95	266,400	7,093,700
27	UIUC	HVAC Retrofit - Two Buildings	5.10	440,700	7,534,400
28	UIC-HSC	Install Supplementary Air Handling System - Dentistry Building	5.23	85,600	7,618,000
29	UIUC	Steam Absorption Machine Control - Four Buildings	5.37	145,100	7,763,100
30	UIUC	Domestic Hot Water Control - Four Buildings	5.47	23,500	7,786,600
31	UIUC	Radiation Zone Control - 28 Buildings	5.51	496,500	8,283,100
32	UIUC	Domestic Hot Water Control - Six Buildings	5.55	51,600	8,334,700
33	UIUC	Reheat Systems Zone Control - Four Buildings	6.38	137,200	8,471,900
34	UIUC	Animal Room Ventilation - Three Buildings	6.62	359,400	8,831,300

### Food for Century III

Food for Century III was launched in 1976 with the primary objective of developing new techniques to increase agricultural production. To that end the University proposed an active construction program which will provide modern and sophisticated laboratory, greenhouse, animal holding, classroom, and office space, as well as sufficient acreage, for researchers from the Colleges of Agriculture and Veterinary Medicine. Some major projects included in the program, such as the Veterinary Medicine Basic Sciences Building and the Agricultural Engineering Sciences Building, are nearing completion now.

Despite significant State support of the program in the past, additional projects will be needed if the University is to achieve a "critical mass" of facilities required to conduct state-of-the-art agricultural research. Table 9 presents a two-year program for Food for Century III which will provide this level of facilities. Two major projects are needed: Plant Sciences Greenhouses and Headhouse and the Animal and Dairy Science Facility. Planning for these projects are proposed for FY 1984, with construction to occur in following years. The remaining projects, although relatively minor in scope, will provide essential laboratory and farm areas required for agricultural experiments.

Following is a summary of the total FY 1984 Capital Budget Request.

	<u>Chicago University Center</u>	<u>Chicago Health Sciences Center</u>	<u>Urbana- Champaign</u>	<u>Total University</u>
Regular Capital	\$4,150.6	\$6,889.2	\$ 9,528.6	\$20,568.4
Energy Conservation/ Fuel Conversion	470.6	742.5	7,618.2	8,831.3
Food for Century III			7,024.0	7,024.0
Total	\$4,621.2	\$7,631.7	\$24,170.8	\$36,423.7

Table 9  
FOOD FOR CENTURY III PROGRAM  
(FY 1984 Dollars)

Project Name/Priority	Total Cost	Requested In FY 1984	Requested In FY 1985	Requested In FY 1986
1. <u>Agricultural Engineering Research Laboratory</u>				
Remodeling	\$ 414,000	\$ 414,000		
Equipment	10,000	10,000		
(Project Subtotal)	(424,000)	(424,000)		
2. <u>Plant Sciences Greenhouses and Headhouse</u>				
Planning	650,000	650,000		
Construction	9,850,000		\$ 9,850,000	
Utilities	600,000		600,000	
Equipment	400,000			\$ 400,000
(Project Subtotal)	(11,500,000)	(650,000)	(10,450,000)	(400,000)
3. <u>Animal &amp; Dairy Science Facility</u>				
Planning	1,000,000	1,000,000		
Remodeling	7,600,000		7,600,000	
Construction	7,500,000		7,500,000	
Utilities	250,000		250,000	
Equipment	550,000			550,000
(Project Subtotal)	(16,900,000)	(1,000,000)	(15,350,000)	(550,000)
4. <u>Veterinary Medicine Animal Room Facilities</u>				
Construction	2,400,000	2,400,000		
Equipment	300,000		300,000	
(Project Subtotal)	(2,700,000)	(2,400,000)	(300,000)	
5. <u>Veterinary Medicine Research Farm Buildings</u>				
Remodeling	150,000	150,000		
Construction	600,000	600,000		
Equipment	50,000		50,000	
(Project Subtotal)	(800,000)	(750,000)	(50,000)	
6. <u>Land Acquisition</u>				
Southern Illinois Research Facility	600,000	600,000		
Agricultural-Veterinary Medicine at Urbana	300,000	300,000		
(Land Subtotal)	(900,000)	(900,000)		
7. <u>Swine Research Center</u>				
Construction	900,000	900,000		
Equipment	50,000		50,000	
(Project Subtotal)	(950,000)	(900,000)	(50,000)	
8. <u>Southern Illinois Research Facility</u>				
Construction	850,000		850,000	
Equipment	50,000			50,000
(Project Subtotal)	(900,000)		(850,000)	(50,000)
TOTAL COST	\$35,074,000	\$7,024,000	\$27,050,000	\$1,000,000



PART II

FISCAL YEAR 1984 OPERATING BUDGET REQUEST

## INTRODUCTION

Table 10 presents an historical summary of the Board of Trustees Operating Budget Requests from FY 1975 through FY 1983. As discussed in detail in Part I, and as is obvious from the information in Table 10, the current year's new revenues were dramatically lower than in any recent year. Those revenues that were available were the net result of a decrease in General Revenue Fund (down by \$2.0 million, excluding retirement and capital funds), and an increase of 9.1 million in the Income Fund (primarily student tuition), plus a small increase in other appropriated funds. The significant drop in new funds, coupled with the need to match FY 1982 salary commitments in FY 1983, has made the current year one of extreme budget pressure, one in which enrollments in some of the most sought after program had to be reduced, one in which overall employment levels had to be reduced at a time when demand for the University's services has never been higher. The incremental budget request which is contained in the following pages is intended to meet both the most pressing needs for the University's advancement and to provide some restoration of the ground lost in FY 1983.

Following the format of recent budget request documents, the FY 1984 Operating Budget Request is presented in three major sections: Continuing Components--those activities necessary to maintain the University's current level of operation; Programmatic Components--those new, expanded, and improved efforts which will enable the University better to respond to the demands for its services; and Special Services/Special Funding Components--those activities carried out at the University by direct legislative mandate, often with specifically dedicated funds to support them, but which are outside the traditional instructional, research, and service areas. Table 11 displays the full incremental request, while Table 12 identifies individual programs included in the request.

In addition to these major sections, three appendices are included. Appendix I presents a series of University budget needs which would remain unmet, even if the full incremental request outlined in Table 11 were appropriated, and which should be addressed if revenue growth in FY 1984 is enhanced beyond initial projections. Appendix II presents FY 1984 Retirement funding needs, including the prospects for reallocation of funds no longer required for payments to the Illinois Building Authority. Appendix III includes technical data for the calculation of incremental needs for continuing components.

TABLE 10  
University of Illinois  
History of the Operating Budget Action FY 1975 - 1983  
(Dollars in Thousands)

	(1) Previous Year's Base <sup>1</sup>	(2) University Request	(3) IBHE Rec.	(4) Allocation of Gov. Budget	(5) Legislative Action	(6) Governor's Action	(7) Final	(7 ÷ 1) % Final of Previous Base	(7 ÷ 2) % Final Of System Request
FY 1975	\$198,381.5	\$22,800.2	\$16,743.0	--	\$27,523.0	\$20,043.0	\$20,043.1	10.1%	87.9%
FY 1976	218,424.5	32,343.5	23,899.4	--	29,375.8	16,950.7	16,950.7	7.8	52.4
FY 1977	235,375.5	26,780.3	21,233.3	\$10,064.5	15,950.7	10,172.5	14,644.3	6.2	54.7
FY 1978	250,019.4	31,036.0	23,305.4	16,551.6	17,423.0	15,906.3	15,906.3	6.4	51.3
FY 1979	265,925.8	34,106.6	26,415.5	24,568.1	24,799.6	24,755.6	24,755.6	9.3	72.6
FY 1980	290,681.4	37,473.3	28,320.4	27,550.8	31,279.3	31,279.3	32,188.6 <sup>2</sup>	11.1 <sup>2</sup>	85.9
FY 1981	321,158.3 <sup>3</sup>	41,086.4 <sup>4</sup>	33,830.6	32,391.9	34,688.3	32,391.9	32,391.9	10.1	78.8
FY 1982	353,550.3	47,995.7	41,307.8	28,164.6 <sup>5</sup>	28,164.6	28,164.6	28,334.6 <sup>6</sup>	8.0	59.0
FY 1983	381,884.9	48,733.5	34,627.5	3,935.7	9,622.5 <sup>7</sup>	7,976.2 <sup>7</sup>	7,976.2 <sup>7</sup>	2.1	16.4

<sup>1</sup>Excludes Retirement and IBA

<sup>2</sup>Includes non-recurring funds of \$401.00 for flood damages and \$508.3 for Division of Services for Crippled Children override; percentage without these funds is 10.8.

<sup>3</sup>Excludes non-recurring funds of \$401.0 flood damage, \$508.3 DSCC override. FY 1981 funding no longer includes an appropriation of \$802.4 for Refunds.

<sup>4</sup>BOT printed request of \$40,445.4 plus DSCC price and salary increases of \$641.0.

<sup>5</sup>Represents amount in Governor's Revised Budget. Governor's original recommendation was \$28,563.3.

<sup>6</sup>Includes an additional \$170.0 appropriated to the University from Real Estate Research and Education Fund in HB 774.

<sup>7</sup>Excludes \$1.0 million for lease/purchase of Chicago Medical School facility.

Table 11  
FY 1984 Incremental Operating Budget Request  
(Dollars in Thousands)

	<u>Regular Request</u>	<u>Market Recovery</u>	<u>Total</u>
I. Continuing Components			
A. Compensation Improvement	\$ 19,833.7	\$ 14,578.2	\$ 34,411.9
1. Annualization (3%)	( 4,040.6)		( 4,040.6)
2. Regular (6.5%)	(15,793.1)		(15,793.1)
3. Market Recovery (2.0%)		( 4,859.4)	( 4,859.4)
4. Achieve Third Place (4.0%)		( 9,718.8)	( 9,718.8)
B. General Price Increases	2,930.9	901.8	3,832.7
1. Regular (6.5%)	( 2,930.9)		( 2,930.9)
2. Market Request (2.0%)		( 901.8)	( 901.8)
C. Utilities Price Increase (20%)	6,404.8		6,404.8
D. Library Price Increase (15%)	806.1		806.1
E. O & M New Facilities	1,616.9	526.3	2,143.2
1. Regular Request	( 1,436.3)		( 1,436.3)
2. Market Recovery		( 526.3)	( 526.3)
3. Affiliated Hospitals	( 180.6)		( 180.6)
F. Worker's Compensation	<u>118.7</u>		<u>118.7</u>
Subtotal, Continuing Components	\$ 31,711.1	\$ 16,006.3	\$ 47,717.4
% of FY 83 Base*	( 8.13%)	( 4.11%)	( 12.24%)
II. Programmatic Components			
A. Expanded/Improved Programs	\$ 3,800.0		\$ 3,800.0
B. Equipment Replacement	2,000.0		2,000.0
C. Special Engineering Program	6,000.0		6,000.0
Subtotal	<u>\$ 11,800.0</u>		<u>\$ 11,800.0</u>
% of FY 83 Base	( 3.03%)		( 3.03%)
III. Special Services/Funding			
A. Library Computer System	300.0		300.0
B. County Board Matching	672.7		672.7
C. Cooperative Extension Service	200.0		200.0
D. Fire Service Institute	75.4		75.4
E. Real Estate Research	31.0		31.0
F. Div. of Services for Crippled Children	391.3		391.3
G. Chicago Summer Session	400.0		400.0
Subtotal	<u>\$ 2,070.4</u>		<u>\$ 2,070.4</u>
% of FY 83 Base	( .53%)		( .53%)
IV. Total FY 1984 Request	\$ 45,581.5	\$ 16,006.3	\$ 61,587.8
% of FY 83 Base	( 11.69%)	( 4.11%)	( 15.80%)

\*FY 1983 Operating Base = \$389,861.1, excluding Retirement and IBA Rentals

Table 12  
FY 1984 Expanded and Improved Programs  
(Dollars in Thousands)

UNIVERSITY OF ILLINOIS - CHICAGO

University Center

A. Science and Technology Programs	\$ 100.0
B. High Demand Student Enrollment	435.0
Sciences/Mathematics (\$135.0)	
Architecture ( 70.0)	
Business ( 230.0)	
C. Graduate Student Support	100.0
D. Organized Research Development	125.0
Urban Transportation (\$50.0)	
Urban Economic Development ( 50.0)	
Humanities Institute ( 25.0)	
Subtotal, University Center	\$ 760.0

Health Sciences Center

A. Statewide Health Professions Education	\$ 500.0
B. Interdisciplinary Studies in Health Care of the Aged	390.0
C. Clinical Pharmacology	250.0
Subtotal, Health Sciences Center	\$1,140.0

UNIVERSITY OF ILLINOIS - URBANA-CHAMPAIGN

A. Veterinary Medicine	\$ 587.6
B. College of Law	169.0
C. Response to Changing Student Demand	578.9
D. Graduate Student Support	364.5
Subtotal, Urbana-Champaign	\$1,700.0

GENERAL UNIVERSITY

A. Public Service Programs, Region 2	\$ 150.0
B. State/University Research Resources Program	50.0
Subtotal, General University	\$ 200.0

Total Expanded/Improved Programs	\$3,800.0
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CONTINUING COMPONENTS

COMPENSATION INCREASES  
(\$34,411,900)

The quality of the instruction, research and public services provided by the University is strongly linked to the quality of the faculty and staff that facilitate and deliver those services. The University's tradition of outstanding educational and research accomplishments, and an environment conducive to academic pursuits help significantly in attracting and retaining high caliber faculty and staff. However, to retain highly productive employees and recruit new talent in all fields, an appropriate set of incentives (financial and other) must be offered. These incentives include the richness of library collections, the provision of laboratory space and equipment, the availability of studios and theaters, and access to computer resources. As varied as the incentives may be, they include one common factor--fair and adequate salaries/wages and other components of a total compensation program. The nature of the academic and public sector marketplace is such that it is relatively easy for individual faculty and staff to determine whether or not their compensation is fair and adequate, i.e. "competitive". While the University cannot make such assessments for each individual, it does perform numerous salary and compensation studies annually to determine its overall competitive standing among appropriate peer groups. Cash salary and compensation paid to academic employees are assessed through comparisons with other Big Ten institutions, while nonacademic salary comparisons are made with equivalent employee groups outside the University.

Faculty Compensation

The University's objective during the last four years has been to achieve at least a third place standing within the Big Ten on average faculty compensation. The gap between the University's average compensation and that of the third place institution (Table 13) has remained relatively constant at approximately 5% since FY 1979. Previous studies indicate that one of the major reasons for the lag in compensation is that most of the other Big Ten institutions have benefit packages which include a TIAA-CREF retirement component, supplemented by Social Security, whereas the



TABLE 13

# BIG TEN FACULTY COMPENSATION FY 1979 - FY 1982

	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>	<u>FY 1982</u>
UNIVERSITY OF ILLINOIS	\$26,690	\$29,111	\$31,871	\$34,864
BIG TEN MEDIAN	\$27,517	\$29,565	\$32,677	\$36,063
U of I vs MEDIAN	-\$827	-\$454	-\$806	-\$1,199
PERCENT DIFFERENCE	-3.10	-1.56	-2.53	-3.44
3rd PLACE BIG TEN	\$28,048	\$30,404	\$33,531	\$36,629
U of I vs 3rd PLACE	-\$1,358	-\$1,293	-\$1,660	-\$1,765
PERCENT DIFFERENCE	-5.09	-4.44	-5.21	-5.06

University participates only in the State Universities Retirement System (SURS). Another complicating factor was introduced in FY 1982 which is not reflected in Table 13. The new SURS actuarial firm has reevaluated the "normal cost" of the retirement system (using new assumptions concerning interest rates and long term salary increase projections), and subsequently reduced the amount required to meet the employer's contribution from 12.6% to 8.8% of annual payroll -- even though the benefit package has not been changed. If the data in Table 13 reflected this new normal cost rate, the gap to third place would increase from 5% to 9%. This unexpected change in the cost of SURS benefits may warrant a new investigation into the benefit portion of compensation. Thus, it may be best to focus attention at this time on that portion of compensation -- cash salaries -- which is more clearly understood.

Tables 14 and 15 show the FY 1979-FY 1982 history of average Big Ten cash salaries. While the FY 1982 increment provided to University employees (8% plus 2% mid-year) exceeded the average Big Ten salary adjustment, it did not keep pace with the University's top-ranked peers. Increases in excess of 10% significantly improved the salary levels at four leading institutions, leaving the University of Illinois ranked fifth in average cash salary, and trailing third place by approximately 3%.

Projections of salary increases in FY 1983 provided by other Big Ten institutions are essential in establishing a basis for the FY 1984 budget request. The University's FY 1983 appropriation bill provides funding for mid-year salary increases averaging approximately 3%. Tables 16 and 17 are based on 3% mid-year increase plus the likelihood that the University may generate up to an additional 1.0% to 1.5% average increase through internal reallocation for continuing employees for promotions, matching offers, and exceptional performance. An average salary increase of 6.0-6.5% is anticipated in FY 1983 for the Big Ten, based upon recent estimates (Table 16). The gap between the third place Big Ten institution and the University has grown from FY 1979 to FY 1982 (Table 17) in both actual dollars and percentage terms. The estimated gap will double in FY 1983, from 3% to 6%, or \$1,872, under the assumptions outlined above.

TABLE 14  
RANKINGS OF AVERAGE CASH SALARY  
UNIVERSITY OF ILLINOIS COMPARED TO ALL BIG TEN INSTITUTIONS  
FY 1979 THROUGH FY 1982

<u>Institution</u>	<u>FY 1979 Rank</u>	<u>FY 1979 Weighted Average Cash Salary</u>	<u>FY 1980 Rank</u>	<u>FY 1980 Weighted Average Cash Salary</u>	<u>FY 1981 Rank</u>	<u>FY 1981 Weighted Average Cash Salary</u>	<u>FY 1982 Rank</u>	<u>FY 1982 Weighted Average Cash Salary</u>
Illinois	4	(23,249)	4	(25,181)	4	(27,592)	5	(30,171)
I	10	(21,344)	10	(22,880)	10	(25,466)	10	(27,171)
C	5	(23,212)	5	(24,972)	5	(27,210)	4	(30,210)
F	1	(24,915)	1	(26,694)	2	(29,314)	2	(31,451)
H	9	(22,207)	9	(23,660)	8	(26,198)	8	(28,524)
A	6	(22,839)	6	(24,861)	7	(26,491)	6	(29,220)
E	3	(23,676)	3	(25,479)	3	(28,012)	3	(31,021)
B	7	(22,619)	8	(23,989)	6	(27,095)	7	(29,027)
J	8	(22,209)	7	(24,114)	9	(26,156)	9	(28,228)
X	2	(24,152)	2	(25,895)	1	(29,432)	1	(32,542)
MEAN BIG TEN		(23,042)		(24,754)		(27,297)		(29,756)

Each year's data includes total institution's full-time faculty, excluding clinical departments, whose primary responsibilities are teaching, research or public service. All salaries are reported on a nine month basis, using 0.8182 to convert Fiscal Year appointments. Each institution's salaries have been weighted to the University of Illinois distribution of faculty between 9 and 11 month appointments and by rank. The data source for all statistics is the University of Minnesota Comparison of Average Salaries and Fringe Benefits 1981-82 Budgeted Salaries study.

TABLE 15

# BIG TEN CASH SALARIES FY 1979-FY 1982

	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>	<u>FY 1982</u>
UNIVERSITY OF ILLINOIS	\$23,249	\$25,181	\$27,592	\$30,171
BIG TEN MEDIAN	\$23,025	\$24,916	\$27,152	\$29,695
U of I vs MEDIAN	+\$224	+\$266	+\$440	+\$476
PERCENT DIFFERENCE	+0.96	+1.05	+1.59	+1.58
3rd PLACE BIG TEN	\$23,676	\$25,479	\$28,012	\$31,021
U of I vs 3rd PLACE	-\$427	-\$298	-\$420	-\$850
PERCENT DIFFERENCE	-1.84	-1.18	-1.52	-2.82

TABLE 16  
ESTIMATED INCREASES IN FY 1983 AVERAGE CASH SALARIES  
BIG TEN UNIVERSITIES

<u>Institution</u>	<u>FY 1982 Rank</u>	<u>FY 1982 Average Cash Salary</u>	<u>Estimated FY 1983 Increase*</u>	<u>Estimated FY 1983 Rank</u>	<u>Estimated, FY 1983 Average Cash Salary</u>
Illinois	5	30,171	+ 4.5%	5	31,529
I	10	27,171	+ 5.6%	10	28,693
C	4	30,210	+ 8.0%	4	32,627
F	2	31,451	+ 6.2%	3	33,401
H	8	28,524	+ 3.0%	9	29,380
A	6	29,220	+ 6.5%	7	31,119
E	3	31,021	+ 9.0%	1	33,813
B	7	29,027	+ 6.5%	8	30,914
J	9	28,228	+ 10.5%	6	31,192
X	1	32,542	+ 3.0%	2	33,518
Average Increase			6.3%		
Average Increase without Illinois			6.45%	(final average outcome is expected to be in a range of 6.0-6.5%)	

\*Figures represent estimated maximum rate increase estimates as of 8/82.

TABLE 17  
BIG TEN AVERAGE CASH SALARIES  
UNIVERSITY OF ILLINOIS COMPARED TO THIRD RANKED BIG TEN INSTITUTION  
FY 1979-FY 1983

	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>	<u>FY 1982</u>	<u>Projected FY 1983</u>
University of Illinois - Average Cash Salary	23,249	25,181	27,592	30,171	31,529
<u>3rd</u> Place Big Ten - Average Cash Salary	23,676	25,479	28,012	31,021	33,401
U of I versus <u>3rd</u> Place - Dollar Differential	- \$ 427	- \$ 298	- \$ 420	- \$ 850	-\$1,872
U of I versus <u>3rd</u> Place - Percentage Differential	-1.8%	-1.2%	-1.5%	-2.8%	-5.9%

### Nonacademic Salary Comparisons

For nonacademic staff, annual salary comparisons are normally made with employers outside the University who are most directly competitive for the services of that staff. In some cases, comparisons are made with local employers; in other cases, broader comparisons are made if the market for particular employee skills is statewide or greater. The composite survey of the market, which compares the salary range midpoints for University of Illinois Step Plan grades and market midpoints for comparable employment levels, is currently being restructured and the full report will not be available until later this year. However, conservative estimates based on preliminary market data indicate that the average percent change of the market over the past year is at least 7%.

The data in the table below compare selected University of Illinois grade midpoints with estimated market midpoints:

<u>Grade/ Location</u>	<u>UI FY 1982 Midpoint*</u>	<u>Projected Market As of 9/1/82</u>	<u>UI FY 1983 Jan. Midpoint*</u>	<u>% Behind Market</u>
5 Chicago	\$ 9,590	\$10,730	\$10,021	7.1%
5 Urbana	8,861	10,275	9,260	11.0%
14 (both)	14,243	16,450	14,884	10.5%
19 (both)	18,418	21,575	19,247	12.1%
33 (both)	38,063	45,350	39,776	14.0%

\*The University of Illinois data do not represent actual average salaries of employees within pay grades. Actual salaries are substantially lower.

In addition to market comparisons among competing employers, salary comparisons between nonacademic employees and State of Illinois Code Departments are reviewed annually to gain a general impression of relative equity among University of Illinois employees and their counterparts in

State government. Based upon data compiled by the Illinois Board of Regents and the Board of Higher Education the following comparison can be made:

SALARY DEFICIENCIES BETWEEN UNIVERSITY OF ILLINOIS  
NONACADEMIC EMPLOYEES AND STATE OF ILLINOIS  
CODE DEPARTMENT EMPLOYEES, FY 1979-FY 1982

	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>	<u>FY 1982*</u>
UIC-UC	- 4.47%	- 4.93%	- 5.09%	- 5.52%
UIC-HSC	- 2.94%	- 4.63%	- 2.69%	- 1.83%
UIUC	-15.71%	-18.76%	-20.41%	-18.44%

\*Estimated

These comparisons make no attempt to adjust salaries for regional differences in cost of living, nor for regional differences in market competition. Thus, they are most useful to gauge changes over time, rather than absolute differences. Regardless of which measure is employed, it is clear that the University's nonacademic salary levels significantly lag those of other comparable employers.

FY 1984 Personal Service Funds Required

An increment of approximately \$34,411.9 thousand to the University's personal services base of \$302.8 million is required to provide for four salary administration components:

1. Annualization of the FY 1983 mid-year increase of 3% (\$4,040.6 thousand).
2. Regular Salary Increases of 6.5% (\$15,793.1 thousand) which would match the projected increases in the Consumer Price Index and prevent further deterioration of the spending power of the University's employees.



3. Market Recovery of 2%. Current projections indicate that in FY 1983 the University will drop an additional 2% behind the average salaries expected at other Big Ten institutions. Consequently, an additional 2% (\$4,859.4 thousand) is required to restore the competitive position which will be lost in FY 1983.
4. Closure to Third of 4%. According to the projected FY 1983 Big Ten cash salary analysis (Table 17), the University is approximately 6% behind the third ranked Big Ten institution. The 4% figure (\$9,718.8 thousand) coupled with the 2% market recovery increase is designed to move the University toward third place -- by closing the average salary gap that will exist in FY 1983.

After meeting annualization requirements, these components would provide an increase averaging 12.5% for FY 1984. The need for an increase of this magnitude is clearly obvious in the tables which have just been presented. While it is not possible to know, at this early date, what peer institutions and competing organizations will grant for salary increases, a 12.5% average increase would permit the University of Illinois to make substantial progress in its quest to bring compensation levels more nearly in line with the quality of the institution. Equally important, such an increase would reflect a reaffirmation of the State's interest in maintaining a University of first-rank quality.

PRICE INCREASES  
(\$11,043,600)

Price increase requests for goods and services required for on-going operations of the University are based each year on the most accurate projections available. For the past several years, the University has pursued a policy of requesting differential price increases for certain goods and services which have been subject to unusual inflationary pressures, most notably in the categories of utilities expenditures and library acquisitions. Indicators of inflationary trends such as the Consumer Price Index (CPI), plus analyses of past experiences have been used to project minimum FY 1984 price increase requirements.

Table 18 compares the percent change in the University's appropriations for general price increases during the period FY 1976-FY 1982 with the annual CPI rate for the same period. While the inflation rate has moderated, general price increase funds appropriated to the University lagged behind the CPI by almost one-third (70.4% for the CPI vs. 44.4% for University appropriations). Figure 3 provides a graphic display of this trend.

The State has varied its support of general and differential price increases over the years. Differential utilities increases have been provided since FY 1975. Differential price increases for library acquisitions were provided during the period of FY 1978 through FY 1980, but not in subsequent years. Only energy-related cost increases have been provided for FY 1983. No price increases of any kind will be available for any other goods or services, including library acquisitions. An increase for FY 1984 which provides some funds above the projected inflation rate would permit partial recovery from past losses and slow the continual decline in purchasing power.

General Price Increases - (\$3,832,700)

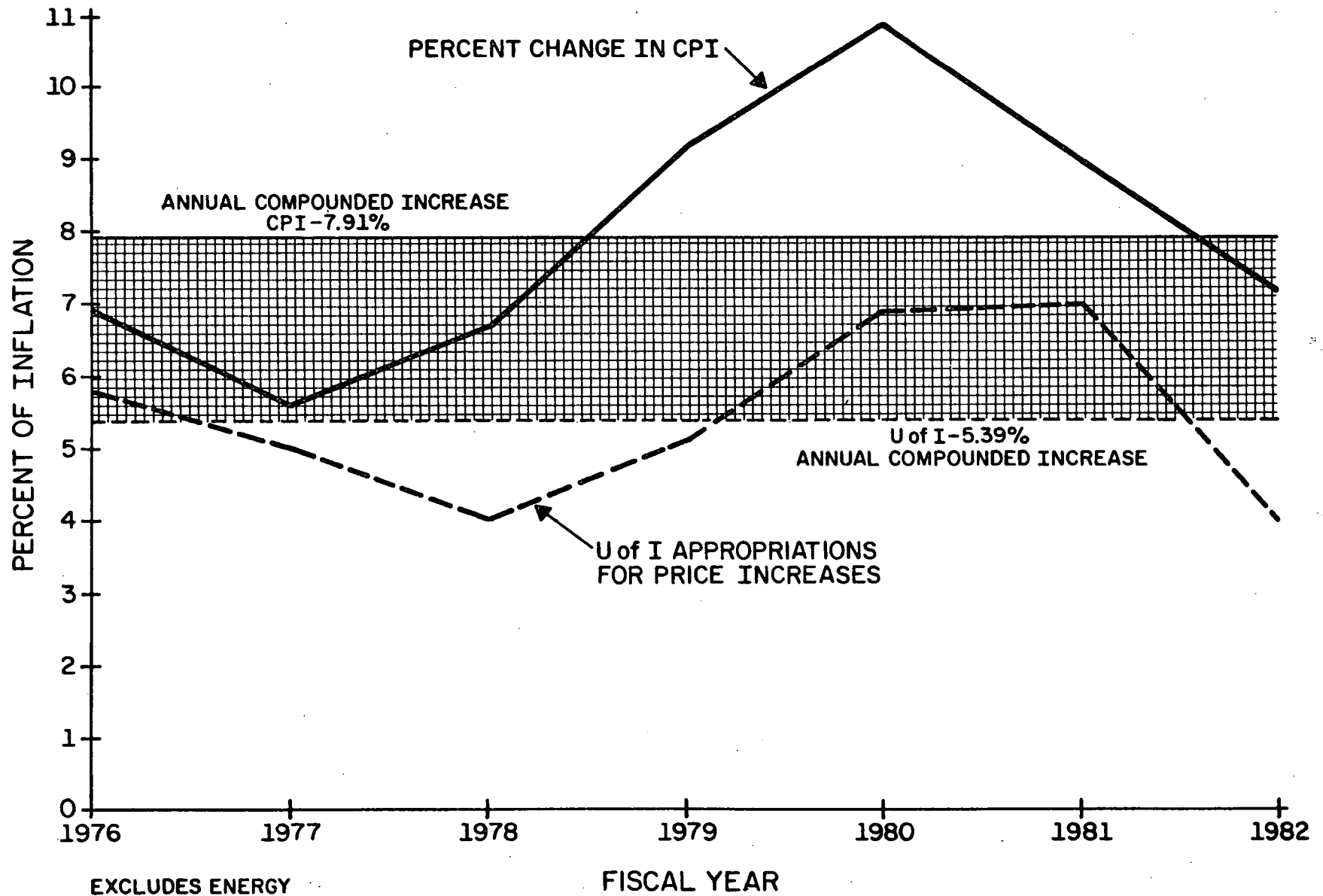
Inflation projections of the major economic forecasting firms were reviewed to determine the probable cost increases of the general

TABLE 18  
IMPACT OF INFLATION  
GENERAL EXPENSE ITEMS

<u>Fiscal Year</u>	<u>% Change in CPI Less Energy</u>	<u>vs</u>	<u>U of I Price Increases (Includes General Items and Library)</u>
FY 1976	6.9%		5.8%
FY 1977	5.6%		5.0%
FY 1978	6.7%		4.0%
FY 1979	9.2%		5.1%
FY 1980	10.9%		6.9%
FY 1981	9.0%		7.0%
FY 1982*	7.2%		4.0%
Compounded FY1976-FY1981	70.4%		44.4%

\*Based on 10 months "CPI" data.

FIGURE 3  
IMPACT OF INFLATION



goods and services which comprise the core of University operations. According to these sources, inflation will average between 6.1% and 6.7% per year for FY 1982 through FY 1984. The projections show an average 6.5% CPI increase by the end of FY 1984.

Based on these projections and the impact of the deficiency in price increase funding over the past seven years, a regular price increase rate of 6.5% plus an additional 2% market recovery amount has been established as the minimum FY 1984 requirement. The basic 6.5% increase would match the projected FY 1984 inflation rate and the 2% "recovery" request would provide only a very small portion of the amount needed to offset the effects of persistent underfunding of cost increases, especially for categories affected in a significant way, such as telecommunications and library acquisitions.

#### Utilities Price Increases - (\$6,404,800)

The direct utilities component of the University's annual operating budget request has increased dramatically over the past several years. Since FY 1974, the University's utilities needs have escalated 339% from \$6,358,000 to the FY 1982 amount of \$27,912,500. While dramatic, the increase is not surprising in light of the spiraling costs of fossil fuels which comprise the primary sources of heat, light, and power used by the campuses.

Utilities cost increases have been particularly high in recent years. For example, the Chicago-University Center experienced an 86% increase in the price of fuel oil, a 61% increase in the unit cost of natural gas, and a 100% increase in the unit price of electricity from FY 1979-FY 1982. The Urbana-Champaign campus experienced a 162% increase in average fuel oil prices, a 60% increase in the average price of natural gas, and a 100% increase in electricity rates over the same period.

In an effort to moderate rising unit costs, the campuses have altered their mix of boiler fuels to increase their utilization of lower-priced energy sources. The natural gas burned at Urbana-Champaign during FY 1980 was approximately one-half of the price per equivalent BTU of the No. 2

fuel oil it displaced. More recently, the decline in world oil prices has prompted the Chicago-University Center to modify its FY 1982 budgeted fuel mix of 18% No. 6 fuel oil and 82% natural gas to an estimated ratio of 42% oil/58% natural gas. A similar action was taken at the Health Sciences Center steam plant.

Although increased utilization of less costly fuels and the implementation of energy conservation measures have helped to control costs, they can only be viewed as temporary solutions. Natural gas prices are expected to continue to increase at more than twice the rate of inflation as measured by the Consumer Price Index. While the weak demand for world oil temporarily has stabilized current prices of that commodity, the uncertain future of Federal policy related to natural gas decontrol makes potential energy costs a critical issue whose outcome remains difficult to predict. Without question, however, decontrol of natural gas prices, whenever it occurs, will drive those prices rapidly upward.

No single economic index adequately reflects the University's utilities situation. Delays associated with the Abbott Power Plant conversion to coal translate into continued dependence on natural gas. With these caveats, the best current estimates indicate that the average increase for FY 1984 will be approximately 20% above projected FY 1983 utilities requirements.

#### Library Price Increase - (\$806,100)

The University libraries provide essential support to academic programs and research activities which take place on the campuses. As a result, library collections must contain a wide variety of current materials covering many subject areas. In addition to its value as a campus resource, the Urbana-Champaign library is a major research and reference center for the entire State through the State of Illinois Library Circulation System. Attempting to adequately serve statewide needs places an even greater emphasis on maintaining a diverse and current collection of materials. Adequate funding for acquisitions is essential if the University libraries are to maintain the present quality of their collections.

In a period of rising prices, the acquisition of necessary library materials is becoming increasingly difficult. The cost of purchasing periodicals and serials has grown precipitously over the past few years, as has the cost of binding periodicals. As a result of these sharp increases in cost, in conjunction with limited funding, there were 12.9% fewer volumes added to the library collections in FY 1981 than in FY 1980. Furthermore, due to limited financial resources no new serials were added.

For the past few years the inflation rate affecting library materials has consistently remained in the 12%-16% range while State funded price increases averaged less than 4%. If the University is to maintain a sufficient rate of library acquisitions to provide adequate support to the academic community and the State, a price increase of approximately 15% is needed for FY 1984.

OPERATION AND MAINTENANCE FOR NEW AREAS  
(\$2,143,200)

Funds in this category are requested for operation and maintenance costs associated with the addition of new State supported space on the campuses. The need for these funds varies according to the specific space types and operating requirements of each facility. The facilities which qualify for new State operation and maintenance support are identified below along with preliminary estimates of their FY 1984 funding needs.

The total FY 1984 request of \$2,143,200 is outlined in Table 19. This amount includes \$526,300 in deficiency recovery funds for the Agricultural Engineering Sciences Building and the Veterinary Medicine Basic Sciences Building. The operation and maintenance costs for these facilities were underfunded in FY 1983. The original appropriation was based on a campus-wide average unit cost for operation and maintenance. However, both structures are equipped with sophisticated research equipment and special building systems which require a higher level of maintenance for efficient and safe operation. The individual components of the total request, including deficiency recovery, are described below. All projects, except the two off-campus agricultural research centers in western Illinois, are located at the Urbana-Champaign campus.

Agricultural Engineering Sciences Building - \$503,200 is required to fund the operation and maintenance needs of this building, including \$28,450 for recovery from the FY 1983 deficiency. Funding for a three-month period was received in FY 1983 and this request is for the nine remaining months of the initial year of operation. The building was funded as part of the Food for Century III Program and will house the Department of Agricultural Engineering, the Wood Science Program in the Forestry Department, and the Food Engineering Program in the Department of Food Science. The facility contains 97,252 gross square feet of space and is estimated to require \$6.51 per gross square foot for operation and maintenance in FY 1984.



TABLE 19  
FY 1984 REQUEST FOR OPERATION AND MAINTENANCE  
SUPPORT FOR NEW AREAS

<u>Building</u>	<u>Gross Square Feet</u>	<u>Total Unit Cost (\$/GSF)</u>	<u>Date of Occupancy</u>	<u>No. of Months Funding</u>	<u>Annual Cost</u>	<u>FY 1984 Amount</u>
Agricultural Engineering Sciences Building	97,252	\$6.51	April 1, 1983	9	\$ 633,000	\$ 503,200
Veterinary Medicine Basic Sciences Building	267,921	\$8.40	September 1, 1982	2	2,251,500	873,100
Swanlund Office Building	20,100	\$4.73	July 1, 1983	12	95,100	95,100
Library Sixth Stack Addition	76,750	\$3.40	December 1, 1983	7	260,925	152,200
Orr Agricultural Research & Demonstration Ctr.	10,828	\$ .81	FY 1982	12	8,800	8,800
Northwestern Illinois Agricultural Research Ctr.	3,660	\$1.10	FY 1982	12	4,000	4,000
Adler Mental Health Center	56,643	\$5.76	FY 1983	12	326,200	326,200
						(\$1,962,600)

AFFILIATED HOSPITALS

Urbana School of Medicine	34,972	\$5.16	FY 1983	12	180,600	<u>180,600</u>
						\$2,143,200

Veterinary Medicine Basic Sciences Building - \$873,100 is needed for the operation and maintenance costs of this new campus location for the College of Veterinary Medicine. This request consists of \$375,250 for the final two months of the initial year of operation and an additional \$497,850 needed as a result of initial underfunding in FY 1983. Partial funding was received for a ten-month period in FY 1983. Occupancy of this building completes the relocation of the College to the south campus area and allows the College of Agriculture to use space vacated by the College of Veterinary Medicine. In addition to housing two departments plus the college administration, the Veterinary Medicine Basic Sciences Building will also include the Veterinary Medicine Diagnostic Laboratory. The total gross square feet contained in this facility is 267,921 at an estimated FY 1984 O & M cost of \$8.40 per gross square foot.

Swanlund Office Building - \$95,100 is necessary for the operation and maintenance of the Swanlund Administrative Office Building. With the building's occupancy in July 1983, the majority of key campus administrative personnel, including the Chancellor, will be housed in one structure. The 20,100 gross square feet of the building will cost an average of \$4.73 per gross square foot to operate and maintain.

Library Sixth Stack Addition - \$152,200 is requested for operations and maintenance support for the Library Sixth Stack Addition for a seven month period in FY 1984. The facility will provide urgently needed storage space for the continuously growing University General Library book collection. The Addition will alleviate the present overcrowded conditions, improve the operating efficiency of the entire library, and allow the funds now spent on remote storage to be redirected to other urgent Library needs. The 76,750 gross square feet of the structure will accommodate approximately 1,500,000 volumes and provide approximately 150 closed reading carrels. Operation and maintenance costs will average \$3.40 per gross square foot.

Orr Agricultural Research and Demonstration Center - \$8,800 is requested for operation and maintenance of the Orr Agricultural Research Center. The Orr Center conducts agricultural demonstration projects in Pike County. Permanent facilities located at the Center constitute approximately 10,800 gross square feet and require an average \$.81 per gross square foot for operation and maintenance.

Northwestern Illinois Agricultural Research Center - \$4,000 is needed to fund operation and maintenance costs of this off-campus agricultural demonstration site. Both the Northwestern Center and the Orr Center described above are administered by the Agricultural Experiment Station with supervisory control by the Department of Agronomy. The facility is comprised of 3,660 gross square feet of space. The estimated cost per gross square foot for operation and maintenance is \$1.10.

Adler Mental Health Center - \$326,200 is required to operate and maintain the Adler Mental Health Center for FY 1984. A study is underway to identify which units will occupy the facility. Although no remodeling or relocation of occupants to the facility will occur until November 1982 at the earliest, it is expected that the six buildings will be fully occupied by FY 1984. The total gross square feet of the buildings is 56,643. The estimated cost per gross square foot for operation and maintenance is \$5.76.

Affiliated Hospitals - Urbana School of Medicine - The Urbana School of Medicine maintains leases with several regional health centers. These lease arrangements have been undertaken in precisely the same way as other arrangements with hospitals affiliated with the instructional programs at other regional medical education sites and in Chicago. With the reaffirmation of the maintenance of a clinical education effort in Urbana-Champaign, the lease arrangements with local hospitals will continue on a permanent basis, and State support for those leases is necessary, just as it was for all other affiliated hospital arrangements. The space is leased as sites for basic medical sciences and clinical medical instruction. Space leased at each site is as follows:

	<u>GSF</u>
Mercy Hospital	13,144
Carle Hospital	12,750
Regional Health Resource Center	4,969
Veterans Administration Hospital	<u>4,109</u>
TOTAL	34,972

\$180,600 is needed to lease and operate and maintain this space for FY 1984. The cost per gross square foot is \$5.16.

Department of Mental Health and Developmental Disabilities Administrative Office Building - At this time the University is negotiating with the Department of Central Management Services for the acquisition of the Department of Mental Health and Developmental Disabilities Administrative Office Building at 1140 South Paulina in Chicago. The Department intends to vacate the building and relinquish control of the property. When the Department terminates its responsibility for the property, the Department of Central Management Services will classify the building and site as State surplus property and entertain proposals from other State agencies for its use. In the event the University receives the facility, the occupants will be the campus units of Personnel Services, Professional Services and Management, and Environmental Health and Safety and the Health Sciences Center units of Personnel Benefits, Building Maintenance, and Police. The two storey structure is in excellent condition and no remodeling will be required to accommodate these units. If the University acquires the building, the request for operation and maintenance funds for new areas will be increased. Although a complete estimate of the building's annual operation and maintenance costs has not been made as of yet, it is anticipated that the costs will be approximately \$300,000.

WORKER'S COMPENSATION  
(\$118,700)

Despite significant increases in the annual budget for Worker's Compensation, claims have out-paced the budget for five of the past six years, as demonstrated in the following table.

	<u>Budget</u>	<u>Expenditure Claims</u>	<u>% Change in Expenditure Claims</u>
FY 1975	\$ 145.0	\$ 145.0	
FY 1976	180.0	214.7	48.1%
FY 1977	288.0	296.0	37.9%
FY 1978	360.0	490.0	65.5%
FY 1979	440.0	570.0	16.3%
FY 1980	590.0 (\$840.0)	840.0	47.3%
FY 1981	1,003.5	934.5	11.3%
FY 1982	1,105.1	1,220.0 (est.)	30.6%
FY 1983	1,186.9		

The relatively modest growth rate shown for FY 1981 is related more to the timing of receipt of Worker's Compensation claims, rather than any diminution of the severe growth rate in Worker's Compensation costs. Late receipt of a major claim for FY 1982, for example, will once again drive total claims above the budgeted amount.

For the past two years the University has utilized the assistance of an actuarial firm in attempting to establish an appropriate level of funding for Worker's Compensation. The general method for determining annual increments has been to increase the Worker's Compensation appropriation at the same rate as the personal services appropriation. Since the FY 1983 personal services appropriation will actually be smaller than that for FY 1982, it was initially felt that no Worker's Compensation increment would be required.

However, since the actual claims for FY 1982 will exceed the appropriation level by approximately 10%, it appears necessary to add an increment of that magnitude in an attempt to keep pace with the most recent rise in expenditures. An increment of \$118,700 (\$1,186,900 x 10%) is therefore required.

PROGRAMMATIC COMPONENTS

## PROGRAMMATIC COMPONENTS

Requests for funding to expand and improve University of Illinois programs total \$3,800.0 thousand for FY 1984. Funding for these initiatives will provide the University with the necessary flexibility to improve the quality of existing educational programs, to respond to changing student demand for specific areas of study, and to enhance its research and public service efforts. New program thrusts will permit the University to expand its leadership role in the discovery, dissemination, and application of new knowledge. The specific programs requested in this component are outlined in Table 20.

### URBANA-CHAMPAIGN CAMPUS

The expanded/improved program request developed by the Urbana-Champaign campus emphasizes the need for additional funds to support the continuing shift of students from lower-cost programs in the Liberal Arts, Education, and Applied Life Studies to higher-cost programs in the sciences, Engineering, Agriculture, and Commerce and Business Administration. Over the past several years the change in student demand has resulted in a tremendous growth in teaching loads as well as a more rapid depletion of equipment and other "high-demand" discipline resources. While the campus has reallocated funds internally to help address the problem, these budgetary actions must be supplemented by incremental State funds if the problem is to be ameliorated. The specific units targeted for these funds are the Colleges of Agriculture and Commerce and Business Administration, and the Department of Mathematics. Similar needs of the College of Engineering are discussed in a special engineering program request.

The Urbana-Champaign campus request also includes funds to improve professional programs offered by the Colleges of Veterinary Medicine and Law. In the case of Veterinary Medicine, the increasing cost of health care education has simply outpaced the rate of funding for these programs. The College of Law is faced with a growing demand for additional courses to serve its own students as well as professional students in other disciplines who wish to pursue joint degree programs.

Table 20  
FY 1984 Expanded and Improved Programs  
(Dollars in Thousands)

UNIVERSITY OF ILLINOIS - CHICAGO

University Center

A. Science and Technology Programs	\$ 100.0
B. High Demand Student Enrollment	435.0
Sciences/Mathematics (\$135.0)	
Architecture ( 70.0)	
Business ( 230.0)	
C. Graduate Student Support	100.0
D. Organized Research Development	125.0
Urban Transportation (\$50.0)	
Urban Economic Development ( 50.0)	
Humanities Institute ( 25.0)	
Subtotal, University Center	<u>\$ 760.0</u>

Health Sciences Center

A. Statewide Health Professions Education	\$ 500.0
B. Interdisciplinary Studies in Health Care of the Aged	390.0
C. Clinical Pharmacology	250.0
Subtotal, Health Sciences Center	<u>\$1,140.0</u>

UNIVERSITY OF ILLINOIS - URBANA-CHAMPAIGN

A. Veterinary Medicine	\$ 587.6
B. College of Law	169.0
C. Response to Changing Student Demand	578.9
D. Graduate Student Support	364.5
Subtotal, Urbana-Champaign	<u>\$1,700.0</u>

GENERAL UNIVERSITY

A. Public Service Programs, Region 2	\$ 150.0
B. State/University Research Resources Program	50.0
Subtotal, General University	<u>\$ 200.0</u>

Total Expanded/Improved Programs	<u>\$3,800.0</u>
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In addition to the requests which are specific to the instructional programs mentioned above, the Urbana-Champaign campus has also expressed the need to improve its graduate student fellowship program. Funds are required to increase the amount of stipend awards and help insure the campus' competitiveness in attracting qualified graduate students.

#### CHICAGO CAMPUS

The shift of students from lower-cost disciplines to higher-cost "high-demand" disciplines is a phenomenon which exists at the University Center in Chicago as well as at the Urbana-Champaign campus. As a result, the Chicago campus is requesting funds to acquire additional faculty and instructional resources necessary to meet the current demands for Engineering, Architecture, Business and Commerce, and physical science programs. Although internal reallocations into these high-demand programs have been made, the total financial resources required continue to exceed the funds available. The capacity of the campus to provide such funds has been significantly diminished by recent budget reductions required to accommodate the lack of adequate funding in the FY 1983 budget. The units targeted for these funds include: the School of Architecture, College of Business Administration, and various departments in the College of Liberal Arts and Sciences. The needs of the College of Engineering are discussed separately in the special engineering program request.

In addition to the request for "high-demand" program support, the Chicago campus seeks funds to improve its undergraduate instructional labs, to improve three research centers, and to strengthen its graduate student fellowship program. The undergraduate instructional lab improvements request entails replacement of obsolete equipment in over 50 basic physical sciences laboratories. The research centers for which program improvement funds are being requested include the Urban Transportation Center, Center for Urban Economic Development, and the Humanities Institute. Funds requested for the graduate student fellowship program are designed to improve the average stipend award.

The Health Sciences Center of the University of Illinois at Chicago has renewed its commitment to health professions education with expanded and improved programs designed to meet the demands of the new technologies and address the changing roles of health care professionals throughout the

State. The need to strengthen portions of the academic programs remains paramount despite sharp resource reductions caused by the abrupt loss of most Federal capitation and training funds in FY 1982. The Health Sciences Center requires new funds in FY 1984 to increase the number of medical residency positions in affiliated hospitals, to upgrade continuing education programs in nursing, and to meet accreditation standards by providing sufficient clinical practice sites for all undergraduates in Pharmacy.

The Health Sciences Center request includes funds to support interdisciplinary teams of health care professionals conducting clinical and research projects on specific issues of drug use and effects, and basic studies in the area of health care for the aged. Colleges participating in the program on aging are Medicine, Dentistry, Nursing and Associated Health Professions. The Clinical Pharmacology program involves faculty of the Colleges of Medicine, Pharmacy, Dentistry, Nursing and the School of Public Health.

#### Equipment Replacement

The University's acute need for equipment replacement is reflected in a separate \$2.0 million request for FY 1984.

These funds are urgently needed to replace obsolete and worn out scientific equipment. Units representing the basic sciences are targeted to receive these funds. A separate request for engineering equipment is contained in the Special Engineering program request.

#### Special Engineering Program

The special request for engineering program support reflects the University's attempt to respond to changing societal demands for educational opportunities. In recent years the University has experienced unprecedented growth in the demand for enrollment in its engineering programs. To maintain the quality of these programs additional funds are required to employ additional faculty, improve faculty salary levels, replace obsolete equipment and remodel engineering facilities.

CHICAGO-UNIVERSITY CENTER

SCIENCE AND TECHNOLOGY PROGRAMS  
(\$100,000)

Undergraduate Instructional Laboratories - (\$100,000)

The undergraduate instructional laboratories at UIC-UC were constructed and equipped in the years 1965 to 1970. Age and intensive use have taken a heavy toll on these facilities. Consequently, maintenance, repair and replacement costs have exceeded budget increments over the years. Obsolescence of many of the common undergraduate instructional items such as balances, microscopes, and oscilloscopes reduce the value of training received in these laboratories. Intensive use of the laboratories and increased enrollment in most undergraduate science courses accelerate the wear and breakage factors, especially in those areas in which duplicate equipment is not available.

The most debilitating factor in the deterioration, however, is price escalation for supplies, maintenance and repair, as shown in Table 1. Inflation is approaching 30% annually for the most common supplies used in undergraduate laboratories, while general price increases in State funds have averaged about 5% per year since fiscal 1976. A vigorous program of repair, replacement and upgrading is needed to restore the quality of education in these laboratories to the level of FY 1976. This request begins a four-year program to provide an additional \$400,000 in expense and minor equipment funds for Biological Sciences, Chemistry, Geological Sciences and Physics. The request for FY 1984 would add \$100,000 in resources to support undergraduate instructional laboratories in these four departments.

TABLE 1  
ANALYSIS OF COSTS OF UNDERGRADUATE INSTRUCTIONAL LABORATORIES

	<u>FY79</u> (Base Year)	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>
Increases in State Funds for General Prices					
Annual %	Base	6.9%	7.0%	4.0%	0.0%
Cumulative Index	1.00	1.069	1.144	1.19	1.19
Budgeted Expenses, Science Departments Escalated by Annual Increases (in thousands)	\$487.3	\$520.9	\$557.4	\$579.7	\$579.7
Actual Price Escalation	1.00	1.25	1.61	1.75	2.00 (estimated)
Base Budget Escalated by Actual Rate of Increases	\$487.3	\$609.1	\$784.5	\$852.8	\$974.6
Actual Expenditures (Base Budget + Redirected Resources)	\$514.4	\$541.4	\$582.5	\$610.2 (estimated)	\$657.4 (estimated)

HIGH DEMAND STUDENT ENROLLMENT PROGRAMS  
(\$435,000)

Several instructional programs at UIC-UC are confronted with budgetary problems directly related to enrollment growth at both the undergraduate and graduate levels. Student demand for programs in Architecture, Business, Computer Science, and Engineering has increased sharply over the past six years and is projected to continue at high levels throughout the 1980's. In addition, enrollments in prerequisite support courses for these fields have risen concurrently, particularly in the sciences and Mathematics. The major objective of this request is to provide additional resources for Architecture and Business, plus the sciences and Mathematics designed to enable them to respond to continuing enrollment pressures.

School of Architecture - (\$70,000)

The graduate program in Architecture has grown from an enrollment of one student in 1976 to 108 students in 1981, while undergraduate enrollment also increased. Funding for the program has not kept pace with increasing enrollments, consequently an 11% decline in the expenditures per FTE student occurred between Fall 1976 and Fall 1981 (Table 1).

The Master's program in Architecture began in Fall 1976, but space and budget constraints limited the number of program options that were offered until Fall 1981. Realignment of space and internal reallocation of funds enabled Architecture to offer three program options this year. Enrollment pressures are expected to continue for the School of Architecture, particularly as recognition of the quality of the program and the staff at UIC-UC increases. Graduates of the Master of Architecture program are now working with some of the most prestigious architectural firms in Chicago.

Current funds allow the School of Architecture to serve a maximum of 100 graduate students in its two-year program. In Fall 1981, 139 first-year students applied to the program, but only 48 were admitted. Applications for Fall 1982 are running slightly ahead of last year, but the number of admissions will again be limited. The School of Architecture has denied admission to some highly qualified applicants due to the limitations in faculty, space, and support resources.

TABLE 1  
SCHOOL OF ARCHITECTURE

FALL TERM ENROLLMENT TRENDS

<u>Architecture</u>	<u>1976</u>	<u>1979</u>	<u>1981</u>	<u>1983</u> (estimated)
Majors				
Undergraduate	551	572	598	600
Graduate	1	74	108	120
Total Majors	552	646	706	720
FTE Students	316	416	491	500

SUMMARY COST DATA\*

<u>Architecture</u>	<u>1976-77</u>	<u>1981-82</u>	<u>% Change</u>
State Funds per FTE Student	\$2,205	\$1,956	-11.3%
Student/Faculty Ratio	10.42	13.18	+26.5%

\* Based on Fall Quarter Enrollment.

Source: Resource Performance Profile

Table 1 illustrates the overall decline in the State funds per FTE student that have been available to Architecture since the start of the Master's program. In addition, there has been a substantial increase in the student/faculty ratio in the School. Given the intensive nature of the Architecture program and the personal attention that is required for each student's projects, the increase in the student/faculty ratio is a serious problem.

This request for \$70,000 for the School of Architecture would provide an additional 3.0 FTE faculty. An eventual enrollment increase of 20 to 25 students in the graduate program is anticipated--with total enrollments stabilizing at that level--as the three Architecture program options become fully operational.

#### College of Business Administration - (\$230,000)

In 1979, UIC-UC began a five-year incremental budget and enrollment plan designed to provide sufficient resources for an enrollment of 3,150 undergraduate and 500 graduate students in the College of Business Administration's existing day and evening programs. At the same time, the College began preparing for a reasonable expansion of undergraduate and graduate programs during the evening hours.

The College has stabilized enrollment at the planned levels. Table 2 illustrates the change in enrollment since 1979. Although the planned enrollment levels have been nearly reached, there has been insufficient funding to sustain this level of enrollment. Table 2 also shows the number of credit hours by student level that were taught in the College of Business Administration in the Fall quarters for the last two years. Although only a slight increase in credit hours has occurred, the full effects of the present enrollment levels will become more evident as lower division students (who take most of their coursework in Liberal Arts and Sciences) progress to the upper division courses in Business. As this occurs, the College will need \$150,000 in additional funds to add faculty and support resources. The campus anticipates providing about half of these resources through internal reallocation, and requests \$75,000 in incremental State funds targeted to complete the five-year enrollment plan.



TABLE 2  
COLLEGE OF BUSINESS ADMINISTRATION

<u>Business</u>	<u>FALL TERM ENROLLMENT</u>			
	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u> (estimated)
Undergraduate	2,789	3,136	3,150	3,150
Graduate	334	372	442	480
Total	3,123	3,508	3,592	3,630
FTE Students	2,240	2,203	2,285	2,325

<u>Business</u>	<u>FALL TERM CREDIT HOURS</u>		
	<u>1980</u>	<u>1981</u>	<u>1982</u> (estimated)
LD	8,888	8,716	8,850
UD	19,647	20,277	20,700
GRAD I	3,266	3,973	4,030
GRAD II	316	228	230
Total	32,117	33,194	33,810

The College also proposes to respond to the high demand for undergraduate evening programs with the implementation of the B.S. in Business Administration in Fall 1983. This program is expected to enroll up to 400 students, if adequate State funding is available (Table 3). The funds will support additional evening courses in Business and additional lower division courses for business majors in the College of Liberal Arts and Sciences. The campus is proposing a two-year program of incremental State funding totaling \$200,000 to support this expansion of undergraduate enrollment in Program P.M. The FY 1984 request is for \$80,000, of which \$50,000 will provide 2.0 FTE faculty in the College of Business Administration. The additional \$30,000 will provide necessary instruction for business students in the College of Liberal Arts and Sciences.

The College of Business Administration has found that there is a strong demand by students who wish to pursue business degrees at night. Although the college has offered some Program P.M. courses in the past, this will be the first time that it has been able to offer an undergraduate degree program during the evening hours. By offering the proposed general business program in a highly structured format, the needs of many working students can be met in an economical and efficient manner.

The College of Business Administration found a similar need for a Master of Science in Accounting program to serve students from the Chicago area. The Department of Accounting plans to initiate the M.S. in Accounting program in Fall 1982 on a very limited basis. This program will serve 135 students in both day and evening courses by its fifth year of operation (Table 3). The M.S. in Accounting program offers a selection of courses which meet the demand for accountants with skills in computer science, international business, Federal legislation, and measurement theory. The program is designed to attract students who have full-time positions in the Chicago business community, as well as students who recently completed their baccalaureate degree in Accounting. New faculty and support services are essential to fully develop the Master's degree program in Accounting. This initial request for \$75,000 would provide 2.0 new FTE faculty in Accounting, along with the necessary support services to adequately continue this new degree program.

TABLE 3  
COLLEGE OF BUSINESS ADMINISTRATION

Bachelor of Science in Business Administration  
Enrollment and Credit Hour Projections

	<u>Budget Year 83-84</u>	<u>2nd Year 84-85</u>	<u>3rd Year 85-86</u>	<u>4th Year 86-87</u>	<u>5th Year 87-88</u>
Number of Program Majors (Fall Term Headcount)	200	250	300	400	400
Annual Number of Credit Hours Taken by Program Majors*	3,130	3,490	3,840	4,550	4,550
Annual Number of Credit Hours Taken by Non-Majors*	200	250	300	400	400
Annual Number of Degrees Awarded	10	20	30	40	50

Master of Science in Accounting  
Enrollment and Credit Hour Projections

	<u>Budget Year 83-84</u>	<u>2nd Year 84-85</u>	<u>3rd Year 85-86</u>	<u>4th Year 86-87</u>	<u>5th Year 87-88</u>
Number of Program Majors (Fall Term Headcount)	40	60	90	120	135
Annual Number of Credit Hours Taken by Program Majors*	1,000	1,500	2,250	3,000	3,400
Annual Number of Credit Hours Taken by Non-Majors*	120	150	200	250	300
Annual Number of Degrees Awarded	10	20	30	50	60

\* Quarter credit hours in courses offered in this academic unit.

Science and Mathematics Faculty and Support - (\$135,000)

The now widely-recognized stresses that the increasing demands for training and research in "high technology" areas are placing on engineering programs also reach into programs in the sciences and Mathematics. While enrollments in the sciences and Mathematics are increasing, it is becoming increasingly difficult to recruit and retain strong faculty in these areas.

This request is to fund the first year of a four-year program to strengthen the sciences and Mathematics by adding faculty, thereby restoring teaching loads to more reasonable levels and supporting important research thrusts. The student/faculty ratio in Mathematics is now at almost 35:1; in Chemistry this ratio is 29:1; and Biological Sciences is operating at a ratio of 22:1. As the data in Table 4 show, these ratios have increased steadily since 1978. During this period undergraduate FTE enrollment has increased 5.5%, and graduate FTE enrollment is up 35.5% (Table 5). Thus the high teaching loads are made even more critical by the increasing proportion of graduate level instruction in these departments.

Student interest has remained strong in all areas, particularly in Mathematics where the number of undergraduate majors has increased by 7% and the graduate majors have increased by 53% since 1978. Although undergraduate majors in Biological Sciences have declined by about 20%, graduate enrollment during this period has increased by more than 60% (Table 6). This shift toward graduate work should be accompanied by lower overall student/faculty ratios, but campus resources have not permitted the requisite addition of faculty.

Funding from this request will allow the campus to hire 5.0 additional faculty members in the areas of Mathematics and the sciences. With the addition of four or five faculty members per year over the next four year period, teaching loads can be reduced to more acceptable levels, and existing research capacity can be strengthened.

TABLE 4  
STUDENT/FACULTY RATIOS  
FALL TERM DATA  
(Excludes Graduate Assistants)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Biological Sciences	23.3	23.2	22.8	22.0
Mathematics	30.0	32.0	35.9	34.4
Physical Sciences:				
Chemistry	27.1	27.1	27.5	29.0
Geology	17.8	16.3	21.2	18.9
Physics	14.6	15.6	16.7	18.2
Physical Sciences Combined	20.8	20.9	22.3	23.2

TABLE 5  
FTE ENROLLMENT  
FALL TERM DATA

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Undergraduate</u>				
Biological Sciences	1012	974	969	878
Mathematics	2172	2265	2481	2458
*Physical Sciences	<u>1394</u>	<u>1367</u>	<u>1466</u>	<u>1494</u>
Total Undergraduate	4578	4606	4916	4830
 <u>Graduate</u>				
Biological Sciences	97	119	124	141
Mathematics	128	140	174	201
*Physical Sciences	<u>165</u>	<u>173</u>	<u>164</u>	<u>187</u>
Total Graduate	390	432	462	529
 Combined Total Enrollment	4968	5038	5378	5359

\* Physical Sciences include Chemistry, Geology, and Physics

TABLE 6  
HEADCOUNT ENROLLMENT (MAJORS)  
FALL TERM DATA

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Undergraduate</u>				
Biological Sciences	885	763	703	729
Mathematics	504	495	526	539
*Physical Sciences	<u>344</u>	<u>355</u>	<u>364</u>	<u>389</u>
Total Undergraduate	1733	1613	1593	1657
 <u>Graduate Majors</u>				
Biological Sciences	94	131	132	154
Mathematics	106	114	126	162
*Physical Sciences	<u>190</u>	<u>187</u>	<u>153</u>	<u>173</u>
Total Graduate	390	432	411	489
 Combined Total Enrollment	2123	2045	2004	2146

\*Physical Sciences include Chemistry, Geology and Physics.

GRADUATE STUDENT SUPPORT  
(\$100,000)

The University of Illinois fellowship programs are designed to attract exceptional students and provide them with an opportunity to concentrate their academic efforts on education. It is particularly crucial at this point -- when Federal support for graduate students is decreasing -- that the University be able to attract and retain the best graduate students through a strong financial aid program. UIC-UC graduate programs have grown dramatically over the past ten years, but support for fellowships on this campus has not kept pace with that growth.

By Fall 1983, the campus expects to enroll approximately 4,000 graduate students, about 20% of the total enrollment. With current funds, the University can award 42 fellowships, which represents a ratio of approximately 1 fellowship for every 95 students. Approximately 13 additional fellowships would be funded with \$60,000 of this request in FY 1984, thereby improving the award ratio to about 1 in 74. In order to attract the most highly qualified students, the University must be able to offer fellowships at a competitive rate. The additional \$40,000 will enable UIC-UC to upgrade current graduate fellowship stipends to more competitive levels. Because of the unique role UIC-UC plays in providing graduate educational opportunities to many in the Chicago area who have historically been deprived of them, this investment benefits both the State and the University, as well as the students.



ORGANIZED RESEARCH DEVELOPMENT  
(\$125,000)

An impressive research record has been compiled by the faculty at UIC-UC in the brief 17 years of its existence. As the present array of research centers clearly reflects, this campus' public service responsibilities to the urban area in which it is located depend on the quality and quantity of research efforts that can be directed to improvement in the quality of life in the metropolitan area. Evidence from experience at UIC-UC, and at other major comprehensive and research universities, demonstrates that faculty strengths and institutional resources are more effective and productive within the structure of organized research units which have the capacity to sustain larger and more complex long-term research efforts than in individual faculty projects. These units must be supported, however, with a firm commitment by the campus and the State to allocate recurring funds. This request represents a proposal by UIC-UC to build such a commitment for several existing research centers. The campus is requesting \$125,000 in additional State funding to support the efforts of three research centers.

Urban Transportation Center - (\$50,000)

The Urban Transportation Center coordinates the research and direct service functions provided by UIC-UC in urban transportation. The Center plays an important role in providing research and staff development for the transportation agencies in the metropolitan area. The prestige and capability of the Director and the staff have gained national recognition for the Center. In addition, the work of the Center's associated faculty over the past few years has enhanced the reputation of this campus. The Urban Transportation Center can and does compete effectively for funds in the areas of transportation planning, system evaluation and policy development.

The Urban Transportation Center makes significant contributions toward meeting the research and urban missions of UIC-UC. The Center's research efforts are directed toward such topics as evaluation of mass transit system maintenance and replacement programs, coordination of special urban transportation systems, and factors affecting the use of urban transit systems. In 1980 and 1981, researchers at the Center conducted a major

study to determine how to assure maximum use of the various Chicago transit systems. They made specific recommendations on scheduling, disseminating transit information, and marketing that could be used to overcome the general lack of knowledge among transit users. Three faculty researchers also completed a year-long study for the Department of Transportation which evaluated the maintenance schedules and replacement targets for commuter buses. The principal investigator for this project recently received an \$85,000 grant to continue research on maintenance of public transportation systems. The Center expects to receive a \$75,000 grant in FY 1983 for a similar study on commuter rail services.

The Center plans to expand its research on the impact of transportation systems on local and regional economic development. As State and local governments face increasing federal cutbacks in funding for transit systems, the Center will become an important resource to help with planning and maintaining local public transportation programs. The Center also has expanded its own efforts to seek outside funding from sources other than the federal government. During the last three months of FY 1982, the Center submitted eight different proposals to private foundations and organizations.

With additional basic State support, UIC-UC can become an institution of first rank in the field of transportation research. This request for \$50,000 for additional State funds allows the Center to fully support the salary of the Director, plus a portion of the salaries for an assistant director, a research director, a secretary, and a communication director. With this State support, the Center can continue to serve the transportation agency staff of Illinois, as well as interested faculty and students on this campus. The work of the Center is a valuable resource for the State as it faces major transportation questions over the next few years.

#### Center for Urban Economic Development - (\$50,000)

The Center for Urban Economic Development is an outgrowth of the Center for Urban Studies in the College of Art, Architecture, and Urban Planning. The primary purpose of the Center is to coordinate and direct the activities on this campus which address the varied and complex economic development

needs of Chicago. The new Center will continue and expand upon the activities of the Center for Urban Studies. Center functions include applied research, direct technical assistance, and educational programs. The Center supports creative and innovative efforts to promote the retention and expansion of Chicago's existing industrial and commercial base.

The City of Chicago faces a number of very critical economic problems, common to many large urban areas. Declining aggregate income, rising unemployment, and increased social dependency have been paralleled by a shrinking tax base, industrial relocations, and strong disincentives to new capital investments in the City. The Center focuses its efforts on proposals to work with industrial and community organizations toward economic development and neighborhood revitalization. The Center provides technical assistance to public agencies and private firms that need help with site development plans, capital financing, job outreach and training programs, facility design, marketing, public relations, etc. Assistance is provided for activities that range from feasibility studies to actual industrial or commercial development.

The Center also undertakes applied research on industrial and manufacturing employment opportunities; impact assessments of proposed developments on local economies; and research into energy conservation techniques for industrial/commercial properties. The research and policy analysis done by the Center has contributed significantly to the state of knowledge and practice of urban economic development.

Much of the previous funding for Center activities came from the U. S. Economic Development Administration, and more recently, from various Chicago-based foundations. Now the Center is initiating a major drive to obtain additional external support from local agencies and private industrial councils. The Center already has developed a strong base and a sound reputation from which to pursue this new external support. In FY 1983, approximately three-fourths of the external funding for the Center is expected to come from non-federal sources.

This request for \$50,000 in State funds would provide support for core Center operations, including the Director's salary, salary for an additional staff member, and a portion of operating costs.

Institute for the Humanities - (\$25,000)

The Institute for the Humanities, a multi-disciplinary unit located in the College of Liberal Arts and Sciences, is a recently-developed Center designed to encourage and support research in the Humanities. UIC-UC's record in the Humanities is substantial. The faculty in the Humanities have been recipients of numerous Guggenheim Fellowships and National Endowment for the Humanities Fellowships for Independent Study. The excellence of the Humanities departments at UIC-UC is also seen in the substantial number of faculty publications and in offices held by faculty in national scholarly organizations.

The primary goal of the Institute is to increase and improve research productivity within the Humanities, and to promote cooperative research efforts with other disciplines. The Institute plans to hold frequent seminars on current research work being conducted by Institute Fellows. Results of the research will be shared with other faculty members and groups outside the University which can benefit from the findings. Symposia are planned to discuss campus research activities and to attract eminent scholars from all fields to this campus to share their latest research. The staff of the Institute will collect and disseminate information about current UIC-UC research that involves the Humanities. The Institute plans to seek external support so that many of its activities may be conducted on a self-sustaining basis.

The support for the Institute for the Humanities comes from both the campus and external sources. The Humanities departments at UIC-UC are supporting the first Fellows who will be named this year by the Institute. In addition, the Exxon Foundation has provided a \$50,000 grant for operation of the Institute during its first year. Given the excellent record of UIC-UC in the Humanities, this type of external support is expected to continue. The interdisciplinary research, teaching, and professional services of the Institute will enhance the quality of University programs and will attract new research funding to the campus.

A portion of this request for \$25,000 in state funds would allow the Institute for the Humanities to fund the Visiting Scholars program. Approximately \$2,500 will be offered to prominent individuals to come to the campus and participate in the Visiting Scholars program for one quarter. The balance of the funding will be used to support a portion of the Fellows program which is presently being funded through internal reallocations.

CHICAGO-HEALTH SCIENCES CENTER

STATE-WIDE HEALTH PROFESSIONS EDUCATION  
(\$500,000)

In response to Illinois Board of Higher Education (IBHE) master plan policies for medical education, the Health Sciences Center began an ambitious program of regionalization and expansion in 1968, funded with State appropriations and grants from the Federal government. The recent loss of Federal funds to support the operating costs of these programs has necessitated internal budgetary adjustments in an effort to cope with the reductions, yet preserve academic standards.

The Health Sciences Center has adopted several strategies for dealing with the diminished budget base. Enrollment levels have been reduced, but workloads have increased as a result of personnel cutbacks. Administrative procedures have been streamlined to reduce expense and equipment items. Growing emphasis has been placed on increasing funds to the College of Medicine through grants, contracts, and fees for services.

According to data compiled by the Association of American Medical Colleges for the 1979-1980 academic year, the University of Illinois College of Medicine ranked 1st in the number of undergraduate medical students and 3rd in the number of total students. However, the College was 38th in number of total faculty, 41st in faculty with the rank of associate or full professor, and 80th in operating expenditures per student. With the budget reductions of FY 1981 and FY 1982, it is estimated that the College has dropped below 80th (among a total of 116 colleges nationwide) in the last two years.

The current funding situation accentuates the need to sustain those programmatic goals to which the Health Sciences Center has maintained its strongest commitment. The demands of new technology and the continuing requirements to meet accreditation standards have highlighted other serious program needs. To enable the academic programs of the Health Sciences Center to maintain recent progress in program development and respond to the most acute of its present needs, a total of \$500,000 is required in FY 1984. The following sections provide a brief description of each College's program needs.

### College of Medicine

The Medical Education Committee of the IBHE has reaffirmed the State's commitment to reverse the trend of Illinois medical school graduates leaving the State to practice elsewhere. The Committee has recommended as a major goal the establishment of sufficient first-year residency positions in programs affiliated with medical schools to equal the number of graduates from the schools. The College of Medicine requires \$250,000 in FY 1984 to hire department heads in regional sites and coordinators of medical education in affiliated hospitals. Among other tasks to be performed by the coordinators is the improvement and expansion of residency training programs in the regions.

Affiliated hospitals play a key roll in the medical education curricula of the University of Illinois in undergraduate as well as graduate training. In Chicago, the Metropolitan Group of Hospitals is an important part of educational programs. In the Peoria, Rockford and Urbana regions, affiliated hospitals are particularly necessary for medical education. University faculty in these regional programs have now developed the background and sophistication needed to support graduate education where few or no residency programs exist. A number of community hospitals, however, lack full-time directors of medical education to create, manage or coordinate programs which are aimed at attracting and retaining medical school graduates.

Currently a new family practice residency is being considered jointly by Carle Foundation and Mercy Hospitals, major teaching affiliates of Urbana programs. Overall costs for this residency over the next 5 years will total approximately \$2 million, which will be funded largely by the two hospitals. State funds are needed to insure optimum development of the program with appropriate academic control. In this way the Urbana program can begin to fulfill the IBHE mandate for sufficient downstate residencies to attract Illinois graduates.

Rockford Community Hospitals are also changing their emphasis and broadening their relationships with the Rockford School of Medicine. Appointment of a director of medical education in Rockford is a vital first step toward increasing residency positions in the Rockford area.

College of Nursing

As with the College of Medicine, the College of Nursing has had its funding base seriously eroded by the loss of Federal dollars. The extent of the faculty and enrollment reductions resulting from the budget cuts is described in the following table:

COLLEGE OF NURSING ENROLLMENT AND FACULTY  
FALL 1977 to FALL 1981

	Enrollment			Faculty
	<u>Undergraduate</u>	<u>Graduate</u>	<u>Total</u>	
Fall 1977	620	220	840	140.4
Fall 1978	642	269	911	138.5
Fall 1979	604	319	923	148.7
Fall 1980	604	264	868	143.5
Fall 1981	528	235	763	132.6

To meet the requirements of the statewide nursing education plan adopted by the Illinois Board of Higher Education, the College must be able to expand its programs. The increasing sophistication of nursing education with its current emphasis on baccalaureate training, coupled with the fact that almost 90% of the University's nursing graduates are employed in the State of Illinois, demonstrates the importance of the regionalized baccalaureate completion programs of the College of Nursing. The College is also expanding its graduate programs to meet the State's needs for teachers and nurse-specialists.

The College of Nursing seeks \$150,000 in FY 1984 to develop educational materials for use in the regionalized nursing education programs and replace faculty lost because of budget cuts. The FY 1984 request includes \$40,000 for program personnel and \$110,000 for the development of mediated, self-instructional packages to facilitate the upgrading of the nursing profession throughout the State.



College of Pharmacy

The College of Pharmacy requires \$100,000 to provide more clinical practice sites for students. The need was confirmed by the College's accrediting agency which cited the lack of clinical practice opportunities for all undergraduates as a serious deficiency. Currently there are only four clerkship sites: University of Illinois Hospital, Children's Memorial Hospital, Rush-Presbyterian-St. Luke's Hospital, and the University of Chicago Hospitals and Clinics. Training at these clerkship sites is supervised by a pharmacist with a Doctor of Pharmacy degree. Funds are needed to hire faculty to support the addition of six clinical training sites throughout the State to enhance the clinical curriculum, and to develop further the Doctor of Pharmacy program which prepares pharmacists to work closely with physicians and other health professionals in the clinical patient care setting.

INTERDISCIPLINARY STUDIES IN THE HEALTH CARE OF THE AGED  
(\$390,000)

Significant changes are occurring in the Nation's population which result in altered roles for health professionals and shifts in the predominance of certain health care problems. By far the most significant change in the U. S. population is the dramatic increase in life expectancy. Since 1900, the percentage of people in the U.S. over the age of 65 has increased from 4 to 11 percent. By the year 2,000, 12 percent of the population will be over 65 and about half of these people will be more than 75 years old. The medical problems of the aged are apt to be chronic, require continuing care and often are attended by economic and social problems which threaten autonomy and self-motivation. All these problems are best addressed by interdisciplinary teams of health care professionals able to understand the complex physical and social disabilities of the aged. The specific plans for several colleges to participate in the interdisciplinary program are described below.

College of Dentistry

The College of Dentistry requires a total of \$65,000 for basic research and public service which will lead to improvements in the provision of dental care to the aged. The study of cell growth regulation and maturation, i.e., the aging process studied essentially at the cellular level, will require \$35,000. Another \$30,000 is needed to expand a program to deliver dental care to men and women confined to nursing homes. The nursing home program gives students valuable first-hand experience in caring for the elderly; but since most dental procedures are not covered by Medicare, the program would be unable to support itself through fees for services.

College of Medicine

Funds totalling \$200,000 are requested to support the development of research and clinical activities in gerontology, including \$170,000 needed

to hire faculty in the Departments of Internal Medicine, Neurology and Physical Medicine. The faculty will oversee clinical and research projects in conjunction with nursing homes and public agencies responsible for the health care of the aged. The remaining \$30,000 will be used to complete a redesign of the undergraduate and graduate curricula to include the study of the problems of aging.

#### College of Nursing

A total of \$50,000 is requested to support a clinical coordinator who will develop research and educational programs on the care of the elderly. The coordinator will negotiate for new clinical sites and bring investigators together, not only in the College of Nursing, but also throughout the Health Sciences Center.

#### College of Associated Health Professions

The College of Associated Health Professions has begun a program to provide nutritional and therapeutic services to the aged. The program, which brings West Side senior citizens to the Health Sciences Center once a week for group activities, forms a nucleus around which faculty can perform research and conduct teaching into better care of the aged. A total of \$75,000 is requested to hire three FTE faculty to strengthen and expand a program which is sustained at present by volunteer students and faculty.

CLINICAL PHARMACOLOGY PROGRAM  
(\$250,000)

In the past few years, new technology has enabled pharmacists and physicians to measure closely the effects of drugs in the living organism. This capability is having a dramatic effect on the manner in which drugs are prescribed and monitored, especially for patients who are taking drugs to control chronic disorders such as diabetes and heart disease. Given the new advances in technology, the potential for cooperative efforts with the large pharmaceutical manufacturing firms in the State, and the existing strengths in pharmacology of the Colleges of Medicine and Pharmacy, the University is in a particularly advantageous position to mount research and education programs devoted to the specific issues of drug use and abuse.

In addition, the Governor's Task Force on High Technology has recommended that the State nurture the development of industrial research complexes near universities and other sites which possess special technical strengths. The potential location of a medical research park near the Health Sciences Center is enhanced by vigorous State support of academic programs such as clinical pharmacology which are attractive to and supportive of high technology industry.

Illinois is unusually rich in the number of research-based pharmaceutical companies. The potential for collaborative research between industry and higher education has been augmented by recent progress in the development of the research park concept in the Medical Center District of Chicago. With the recent acquisition of the Chicago Medical School facility, investigators from industry and the University can develop joint research projects in the fields of pharmacology and pharmaceuticals.

The State's residential facilities for people with mental and physical disabilities can also benefit from close collaboration with the University's pharmacists and physicians. Expanded knowledge about drug use can lead to improvements in drug treatment programs for those individuals in state institutions.

Just as medicine and pharmacy are at the center of efforts to control the use of drugs for medicinal purposes, they are also at the center of efforts to control the widespread abuse of drugs. Studies designed to address the problem of drug abuse require two interdependent approaches: one is to investigate and understand the physical-chemical-psychological interplay that leads to and supports addictive behavior; the other is to manage programs that will enable people to recover.

The College of Medicine requires \$150,000 in FY 1984 to hire three FTE faculty to develop an upper level course in clinical pharmacology, to devise elective courses in advanced therapeutics, and to establish a strong research program in clinical pharmacology. The faculty will be members of interdisciplinary teams from the Colleges of Pharmacy, Dentistry, Nursing and the School of Public Health devoted to studying problems with the use and abuse of drugs.

The College of Pharmacy needs \$100,000 in FY 1984 to staff adequately the Clinical Pharmacokinetics Laboratory, a highly specialized facility devoted to the study of drug distribution and action in the human body. One of its prime areas of research is the development and use of appropriate analytical tools for the monitoring of a drug in a patient. The laboratory provides a direct communication link to clinical pharmacists and will serve to attract the support and participation of the pharmaceutical industry in Illinois.

URBANA-CHAMPAIGN

VETERINARY MEDICINE  
(\$587,600)

During the past several years, the College of Veterinary Medicine has successfully expanded and improved its programs, on a limited scale, through the acquisition of new facilities, faculty and operational support. The major accomplishment achieved during this period has been the construction of high quality facilities necessary to support the College's programs. With its major facilities needs now met, the College must concentrate on acquiring additional operating funds to allow it to achieve a level of research activity comparable to that of peer institutions, to permit a gradual increase in enrollments, and to expand curricular and clinical training opportunities, particularly in the food animal area.

Several constrictive factors, including the loss of Federal capitation support, limited increases in State-appropriated resources, and inflation, have combined with the development of unprecedented competition for veterinary professionals by new veterinary schools and industry to create a difficult financial environment for the College. Examples of the problems faced by the College of Veterinary Medicine include the faculty attrition rate, which is the highest among all colleges on the UIUC campus, and the necessity of reducing enrollments by 12% for the entering class in FY 1982 in order to preserve the quality of existing programs.

The College of Veterinary Medicine has annually re-examined and modified its goals to reflect its achievements and to adjust to changes in both Federal and State program support. The College's revised goals for FY 1984 and beyond are as follows:

1. To sustain a level of research activity that is comparable with peer institutions. The College is currently among the top five or six veterinary colleges in the nation in terms of the extramural research support that it earns, and it intends to continue improving both its research and educational programs. Comparisons with peer institutions indicate that the College must achieve a level of State support of approximately \$21,560 per student -- in

FY 1984 dollars -- if it is to achieve the level of quality which was projected for it and which is appropriate for the State's only College of Veterinary Medicine.

2. To enroll 90 students in the first-year class by FY 1985 and 104 students in the first-year class by FY 1986. The projections for FY 1985 represent a restoration of the pre-FY 1982 enrollment levels.
3. To achieve teaching associate and technical staff per faculty ratios compatible with those at peer veterinary colleges in the nation. (This is essential if the College is to sustain its commitment to research.)
4. To complete the construction program outlined in UIUC's capital budget request.
5. To improve and expand the teaching, research, and public service programs of the College to maximize use of the new facilities that have been and are being brought on line. This action will include an expansion of animal disease diagnostic activities, biotechnology and animal disease research, and both professional- and graduate-level teaching programs.

The College established a projected goal in FY 1977 of \$15,000 per student in State-appropriated funds that would provide additional faculty and staff to allow planned changes in a new curriculum and would provide personnel for a major expansion in the College's teaching, research, and service programs. This goal was determined following a comparative study of State-appropriated support levels at other veterinary colleges with recognized strong programs. The projection of \$21,560 per student in FY 1984 dollars reflects inflationary increases from the original support level calculated during the FY 1977 study and is projected to be achieved gradually over the next five or six years.

The College has implemented a number of improvements in its professional curriculum that will provide students with a broader course selection and with expanded opportunities for clinical training during the last two years of the students' education. Particular attention is being given to the food animal curriculum, in line with the objectives stated in the Food for Century III program. Even though staffing improvements have



been made during the past several years with major emphasis placed on clinical programs, the need to increase the size of the clinical faculty still remains. Several additional planned food animal teaching programs cannot be implemented without increased personnel support.

Extramural funding of research projects has continued to expand with additional funding being realized from USDA, NIH, and other Federal, State, and industrial sources. Several external reviews have indicated excellence in a number of the College's research programs, especially those dealing with infectious and noninfectious disease problems of food animals and those involving aspects of comparative medical research where knowledge gained is applicable to both man and domestic animals.

The recognized development of a world food crisis and increased energy costs are playing major roles in the demand for expanded agricultural productivity in Illinois and the nation. Almost all national food animal commodity groups have organized under a coalition named the Animal Forum. Individually and collectively these groups have identified the need for the research on food animal diseases as their top funding priority. The efforts of the Animal Forum and many other organizations are being recognized at the Federal level by increases in almost all areas of agricultural research in spite of major reductions in other areas. The College has been very successful in expanding its research programs but, in attempting to fulfill its commitments to the State and to new faculty recruits, it in fact has expanded those programs to the point where it will be difficult for existing faculty to maintain them together with the current enrollment level.

Illinois has also recognized the importance of agricultural research as a major mechanism to increase productivity through the provision of research facilities under the Food for Century III program. The College of Veterinary Medicine is the principal organization in the State with the potential capacity to address many of the food animal disease problems that presently concern the State's animal industries. In order to address these concerns, research efforts directed toward specific animal health and

disease entities will be required. Collaborative efforts in the areas of genetic engineering and biotechnology must be initiated by the College to fulfill effectively its role in contributing to the improvement of productivity in modern intensive food animal production systems.

The FY 1984 program improvement request for \$587,600 will be used to add 5 FTE faculty, 11 FTE teaching associates, 2 FTE academic professionals, and 5 FTE technical support staff to the Departments of Veterinary Clinical Medicine, Veterinary Biosciences, and Veterinary Pathobiology. In addition, one FTE academic and 3 FTE nonacademic positions will be added to Veterinary Medicine Administration. This request is the initial step in a six-year plan that will provide the necessary operational support to maintain the standing of the College as one of the finest veterinary colleges in the nation.

LAW  
(\$169,000)

The three major operating goals of the College of Law are:

1. to achieve student/faculty ratios more comparable with those at peer law colleges in the Nation;
2. to be responsive to the rapid developments in the law through the introduction of additional courses in the areas of national concern; and
3. to introduce additional interdisciplinary work into the law curriculum, as well as to be able to respond to the needs of other academic units on campus that want law components in their instructional and research programs.

Enrollment pressures remain high for the College of Law. During FY 1982 and FY 1983, applications for admission have increased by 50% -- over 33% in FY 1983 alone. Many excellent students have been denied admission to the College during the last few years as enrollments have been held constant between 600 and 650 students. However, these efforts to bring enrollments more in line with available resources in the College have not been successful. The student/faculty ratio at the College of Law is well above those found at most other law schools of comparable size and quality (see Table 1).

Unfortunately, between FY 1980 and FY 1983, nine outstanding faculty members left the College. Although they now have been partially replaced, the College presently faces extreme pressures in the retention of its excellent faculty and in the recruitment of new faculty of the highest quality. Low salary levels have contributed to the exodus experienced in the College of Law, but heavy teaching loads and the inability to include more courses in the curriculum and to adopt new approaches to law instruction have probably been even more important factors.

In recent years, it has become apparent that some aspects of legal education (especially beyond the first year of instruction) require smaller

classes. This is particularly true in problem-oriented courses such as estate planning, business planning, closely supervised instruction in trial advocacy and in clinical education, legal ethics, and labor negotiations. Because the College has not had enough faculty members, it has not been able to be responsive to these needs.

An excellent law school must be able to offer specialized instruction in new areas. Legal management of resources and energy, deferred compensation, corporate finance and securities law, labor law and negotiation, real estate financing, and taxation of international transactions are current examples of such areas. The College must also be able to respond to requests from fellow faculty members across the campus to assist in the establishment of joint degrees such as the J.D./MBA., J.D./M.S. in Urban and Regional Planning, and the J.D./M.Ed. in Education, J.D./Ph.D. in Education, the J.D./A.M. in Labor and Industrial Relations, the J.D./M.A.S. (Master of Accounting Science), the J.D./M.A. in Public Administration, and the J.D./M.D. The College should also be able to release faculty time for teaching of law-related courses in other academic units. New interdisciplinary courses are presently needed within the College: Law and Economics, Law and Medicine, Law and Drugs, Law and Psychiatry, and Legal History -- to name a few. The present staffing of the College does not permit it to address any of these needs adequately, because faculty members must devote nearly all of their time to maintaining the basic curriculum.

The new needs of the program will require increased in-house production of teaching materials and video-taping of student performances in trial advocacy and negotiation type courses. Expense funds will be required to support the requirements of the support personnel that will be hired.

The College of Law derives its national standing, in large measure, from the research contributions its faculty members have made in virtually all the important areas of law. Faculty members are also heavily involved in public service activities: Commission on Uniform State Laws, Illinois Pattern Jury Instructions, the development of new legal mechanisms to further the international trade of the State of Illinois and the Nation

(e.g., with the People's Republic of China), etc. To maintain these components of the College program, faculty time, as well as additional non-academic staff and financial support, are required.

An incremental amount of \$290,000 is being requested over a period of two years to enable the College to meet the goals outlined above. The FY 1984 portion of this request, \$169,000, will be used to employ one FTE associate professor, one FTE assistant professor, one professor on summer appointment and 3 FTE nonacademic support staff, as well as to fund associated expenses and student wages.

TABLE 1  
STUDENT/FACULTY RATIOS AT  
SELECTED LAW SCHOOLS 1981/82

Illinois	26.8
Cornell	22.6
Chicago	22.1
Berkeley	21.5
Duke	24.5
Florida	25.0
Indiana	23.4
Iowa	19.4
Michigan	27.1*
Minnesota	26.6*
North Carolina	24.1
Northern Illinois	14.9
Northwestern	16.8
Ohio State	23.1
Southern Illinois University	16.8
Stanford	15.8
Wisconsin	24.0
Yale	14.2

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\*See Note #3 below.

Notes

1. Source: American Bar Association Annual Survey.

2. Survey excludes:

(a) deans, associate deans, and assistant deans who also teach. At Illinois, both the dean and associate dean teach 1/2 time. since the same is true at most other law schools, the data should therefore still be valid.

(b) all faculty who were on leave during the fall semester, vacant positions, and teaching assistants. Since these categories will differ from school to school, the data are therefore not strictly comparable.

Notes (cont'd)

3. Ratios increase with the size of the school. Michigan and Minnesota are both larger than Illinois (Michigan by 500 students) which is reflected in their ratios. They were included for Big Ten comparison purposes. Northern Illinois and Southern Illinois are smaller: with respect to them see Note 4.
4. Reason for selection: The schools selected are Big Ten schools and those additional schools which the University of Illinois regards as principal peers. Exceptions: Northern and Southern Illinois which are not peers but were included for in-state comparison purposes.

RESPONSE TO CHANGING STUDENT DEMAND  
(\$578,900)

Since FY 1971 significant shifts in student enrollment have occurred away from elementary, secondary, and physical education and the social sciences toward accounting, business administration, finance, economics, computer science, and agriculture<sup>1</sup>. These shifts have placed severe pressures on the Colleges of Agriculture and Commerce and Business Administration, as well as the Department of Mathematics, which provides service courses for the other areas mentioned. Instructional units (semester credit hours) generated in these units have increased markedly:

	Instructional Units		
	Fall 1970	Fall 1981	Percentage Increase
College of Agriculture	18,295	24,671	34.9%
College of Commerce & Business Administration	35,853	62,466	74.2%
Department of Mathematics	41,384	45,027	8.8%

This changing load pattern has taxed UIUC to meet current student and societal needs with the quality programs which have been its hallmark. Student admissions have had to be severely restricted in these disciplines because of a lack of resources. Since students are admitted on the basis of "best-qualified-first," the entrance standards for these units have risen steadily as the demand has grown. The mean high school rank of entering freshmen in most of these areas is now well above the 90th percentile, and the mean ACT scores for the group range from 26 upward, depending on the discipline involved.

The pressures have grown so great in some curricula that the number of on-campus transfers has been reduced drastically, and the number of off-campus transfer students has been cut back sharply. This has strained long-standing commitments and agreements with community colleges and other four-year institutions of higher education in the State. However, it seems totally unreasonable to raise entrance requirements even higher for entering freshmen in order to accept transfer students who may have lower qualifications.

<sup>1</sup>Enrollment pressures in Engineering are described in the "Special Engineering Programs" section.



At present, no further enrollment expansion in the high-demand curricula cited is being considered; in some areas, enrollments will be reduced unless support is increased. However, even if there is no further growth in the high-demand areas, the University must provide sufficient funds to meet the needs created by the students currently enrolled. To the extent possible, the Urbana-Champaign campus has reallocated internal funds to the units mentioned here; however, these reallocations have been insufficient.

Some areas which are now experiencing stable or declining enrollments were, at one time, high-demand areas in which existing programs were expanded and new programs established, reflecting the interests and needs of society at the time. Beyond the retrenchment which has occurred already in these areas, further internal reallocation away from these areas cannot be effected without seriously jeopardizing their quality and, ultimately, the overall quality of the institution.

The goal that UIUC has been working to achieve for the high-demand areas is to provide enough faculty and accompanying support to reduce the high teaching loads in these areas to a level approximating their average teaching loads for the past twenty years. In order to accomplish this goal, UIUC has proposed in previous years that the State provide half the funds needed and that it would then match State appropriations through internal reallocation of funds. After making substantial program funding reductions for FY 1983, UIUC no longer has the flexibility to reallocate funds to the high-demand units; therefore, all of the required funds (\$2,894,600) are now being requested in five annual appropriations of \$578,900 each for the next five years. This amount will be used to provide additional faculty and support staff to the College of Agriculture, the College of Commerce and Business Administration, and the Department of Mathematics. A breakdown of the total program budget request among the three academic units is shown below:

College of Agriculture - \$176,600

The amount requested for the College of Agriculture personnel totals \$170,200. These funds will be used to hire an additional 4 FTE faculty

members, 2 FTE graduate assistants and 2.5 FTE nonacademic support staff. In addition, \$6,400 will be used to finance attendant expenses and wages.

College of Commerce and Business Administration - \$330,800

A total of \$315,400 will be used to employ an additional 7 FTE faculty, 4 FTE graduate assistants and 1.75 FTE nonacademic support staff. An additional \$15,400 will be used for expenses and wages.

Department of Mathematics - \$71,520

A total of \$70,640 will be used to employ an additional 2 FTE faculty members, 1 FTE graduate assistant and .60 FTE nonacademic support staff. An additional \$880 will pay for expenses and wages.

GRADUATE STUDENT SUPPORT  
(\$364,500)

Most institutions of higher education have adopted the principle that fellowship stipends should be approximately equivalent to half-time salaries for graduate assistants. When UIUC established its fellowship rates more than thirty years ago, it followed that principle. Unfortunately, past funding has been inadequate to maintain the original relationship between fellowships and graduate assistantships, and UIUC fellowships for graduate students currently are well below the average salary for half-time assistants. This situation potentially affects both the quality of the graduate students and the numbers of qualified minority students that UIUC can attract.

The quality of a graduate institution is strongly influenced by the quality of its students. The presence of first-rate students is essential to the maintenance of an outstanding faculty. Great professors attract the best students and vice versa. It is not possible for departments to build and to maintain academic staff of the highest quality if they cannot compete for the best graduate students. A strong program of merit-based fellowships is essential if a university is to attract and retain the most highly qualified graduate student body.

Financial aid funds have been instrumental in the Graduate College's successful efforts to promote diversity in the graduate student body and to provide opportunities for graduate education to underrepresented racial and ethnic minority groups. However, limitations on the size and the number of the fellowship stipends have constrained the Graduate College's achievements in this area. Although the graduate enrollment of some racial minorities has stabilized or even increased, the enrollment of black graduate students has decreased since 1974. While socio-economic factors external to the University have contributed to this decline, it is also attributable, in part, to the inability of the Graduate College to offer qualified minority students an attractive financial aid package.

The ability of UIUC to offer competitive fellowship programs for graduate students has declined seriously in the past ten to fifteen years. Since the development of the post-Sputnik Federal fellowship programs

(most of which have since disappeared), UIUC fellowship programs have been financed in part by State funds and in part by Federal cost-of-education allowances. While State funds have increased from \$400,000 in the mid-sixties to \$735,000 at present, Federal cost-of-education allowances in the same period have decreased from over \$1,400,000 to \$138,000. As a result, UIUC programs have disappeared, shrunk, or survived only to become less competitive as peer institutions have increased their levels of support to meet inflationary increases in the cost of living and general research expenses.

In FY 1982 a total of \$170,000 was provided in new funds to support fellowships. Forty-three new fellowships at \$3,000 each were created, and all existing fellowships below that level were raised to \$3,000.

In order to achieve the goal of establishing parity between University fellowship stipends and half-time graduate assistant salaries, Urbana-Champaign is requesting incremental funds over a multi-year period. The FY 1984 component of that request (\$364,500), which will be used to increase all 243 fellowships from \$3,000 to \$4,500 each, is the first step toward achieving this goal.

GENERAL UNIVERSITY

PUBLIC SERVICE PROGRAMMING IN REGION 2  
(\$150,000)

The primary objectives for public service programming in the University of Illinois Public Service Region 2 (Cook County and eight contiguous counties) for FY 1983 are as follows:

1. To meet the educational needs of citizens in the area by offering programs comparable in quality to those provided on campus.
2. To enrich both research and teaching efforts by increasing participation of University of Illinois faculty in continuing education and public service programming.

To attain these goals, \$150,000 in new State funding is requested for FY 1984 to initiate two major components; programming in Region 2; and exploration of a University-wide data system.

Programming in Region 2

Program Development (\$50,000)

These funds will be utilized to expand and/or develop specialized programs which address community needs. An example of the type of program under consideration is noncredit coursework designed to assist small business operators. Faculty in the disciplines of Commerce, Business Administration, and Engineering would prepare relevant seminars on topics such as financing small businesses, marketing techniques, inventory control, computers, and advertising. These types of programs result in providing Region 2 with the benefit of the University of Illinois' academic expertise across a wide range of utilitarian topics with direct application to the business sector. Funding will allow presentation of 10 complete programs.

Office of Continuing Education (\$25,000)

The Office of Continuing Education in Chicago has recently experienced considerable growth in conference, seminar, and short-course activity for professionals. Consequently, very few new or innovative programs are undertaken each year. However, increased State requirements for mandatory

continuing education, and additional pressure from professional associations for periodic updates have combined to stimulate greater demand for this service. This demand for professional continuing education programs is not being adequately addressed. Funding of this request would provide partial staff support to develop new and innovative programs in a variety of disciplines.

Program Support - (\$45,000)

Program support relates to opportunities for the University to improve its outreach activity via use of remote delivery technology. This phase will involve expansion of the electronic blackboard in Region 2 to offer both credit and noncredit continuing education opportunities. Remote learning equipment will be located at Oak Brook for the delivery of courses which are currently conducted only on campus.

University-Wide Data System - (\$30,000)

Currently, no data system exists which records programmatic efforts in continuing education at either campus or system-wide levels. Consequently, collection and maintenance of basic information for reporting purposes is time-consuming and problematic. Funding is requested for staff support to design a computer program which will meet the overall data requirements for a University-wide system. The specific purposes of this system would include recording continuing education and public service activities for use in planning, delivering, and evaluating those services.

In summary, \$150,000 is requested in new State funding to develop and improve continuing education programming efforts in Region 2, and to implement a University-wide data system.

STATE/UNIVERSITY RESEARCH RESOURCES PROGRAM  
INSTITUTE OF GOVERNMENT AND PUBLIC AFFAIRS  
(\$50,000)

There is growing awareness both nationally and statewide that higher education needs to develop more effective research communication channels with industry and state and local government officials. Many State industrial and governmental leaders are unaware of potential contributions that University of Illinois faculty can make in addressing the increasingly complex technological, scientific, and public policy issues facing Illinois. The need to improve the State/university research linkage has arisen from several recent trends. First, Illinois is facing a deteriorating economy where it has become a less attractive location for new businesses and for expansion of existing businesses. Second, the information explosion has made it difficult for State industrial and governmental officials to keep abreast of current technological, scientific and public policy research conducted at the University of Illinois. Finally, current University research exchanges with industry and government have traditionally relied upon a few individual working relationships. This type of ad hoc communication, while beneficial in many instances, is nonsystematic and does not insure access to all faculty with appropriate research expertise.

The State/University Research Resources Program will meet the needs expressed by the Governor's High Technology Task Force (1982) which suggested that "information on the special expertise of existing university faculty and industrial technical experts and their investigative programs is essential to make known to industry the potential benefits of relocation." To further the collection of this information, the Task Force recommended the "establishment of an inventory of faculty and research strengths."

The primary objectives of the State/University Research Resources Program are: to offer statewide audiences a more systematic way of locating University research resources; to increase the impact of the University's research resources on emerging technological, scientific, and public policy issues facing Illinois; and to sustain the ongoing cooperation of Illinois universities in mobilizing faculty resources in response to statewide research needs.



The program builds upon two current projects of the Institute:

1. Office of Statewide Research Resources - This office, formerly staffed by the Coordinator for Government Service Programs, was designated within the Institute in FY 1980 to strengthen University faculty and State government research cooperation. Under the direction of the coordinator, numerous research exchanges were promoted and a publication entitled University of Illinois Service to the State: A Directory of Faculty Research Resources was developed and distributed to State government officials.
2. Faculty Research Assistance to the State (FRATS) - With seed money provided by the Illinois Higher Education Cooperation Act (HECA) in FY 1981, 1982, and 1983, the University, together with four other Illinois universities (Eastern Illinois University, Northern Illinois University, and Southern Illinois University at Carbondale and Edwardsville) has developed a Statewide computerized inventory of faculty research capabilities. The data base will be fully implemented in FY 1983 and will be a resource available to industry, State and local governments, the media, the public, and participating universities.

Specific proposed activities for FY 1984 include:

- Recruitment of additional Illinois higher education institutions (e.g., Northwestern) into the FRATS Consortium and a statewide marketing campaign among potential users of the data base (i.e., industry and State government).
- Placement of faculty or postdoctoral students in State government units, for a designated period or project, as research or policy scientists.
- Development of a series of University/industrial/State government research briefings on issues of technological, scientific, or public policy importance to Illinois.

The State/University Research Resources Program will benefit the State of Illinois by sustaining and expanding the linkage of the FRATS data base to current statewide research needs particularly in high technology and economic development, by increasing visibility of the University's basic and applied research capabilities to interested audiences (i.e., industry, State government and the public), and by enhancing of inter-institutional cooperation activities among Illinois universities.

Total resource requirements for these expanded activities include a full-time program assistant, clerical support, and general program expenses. A total of \$50,000 is requested for FY 1984.

EQUIPMENT REPLACEMENT  
(\$2,000,000)

For several years the University has been seriously concerned with its inability to provide up-to-date instructional equipment. A large portion of the existing equipment base has become obsolete because of normal deterioration and rapid technological change.

The problem of obsolete equipment affects programs in many fields, but nowhere is it more damaging than in those disciplines and programs heavily dependent on "state of the art" technology for both instructional activities and research. Students whose educational programs have included instruction and training on obsolete equipment are simply less prepared than they should be, regardless of the quality of other aspects of their programs. In addition, as the inability to replace obsolete equipment grows, it has a direct effect upon the recruitment and retention of faculty members for whom up-to-date equipment is an integral part of their teaching and research activities. It should be noted that this problem is not unique to the University of Illinois, but is common to major research universities, particularly as Federal funds for equipment purchases have failed to keep pace with inflation. This deficiency, estimated to be at a cumulative total of approximately \$20 million, was partially offset by State appropriations of \$220,000 in FY 1980 and \$650,000 in FY 1981. However, no additional funds were provided in FY 1982 or FY 1983, even though the University sought \$2,500,000 in equipment replacement for FY 1983, and the IBHE recommended \$2,450,000. No incremental funds for this purpose were included in the University's final appropriation.

In view of the especially severe impact of obsolete equipment upon the sciences and other disciplines heavily dependent on rapidly changing technological advances in equipment, the University has devoted a substantial portion of the FY 1984 programmatic request to equipment replacement. A total of \$2 million is sought for FY 1984 to address this critical need. It should be noted that this amount is independent of the equipment needs discussed in the special request for revitalization of Engineering programs.

The total FY 1984 request is distributed among the campuses as follows:

UIC-University Center	\$ 400,000
UIC-Health Sciences Center	600,000
Urbana-Champaign	<u>1,000,000</u>
Total	\$ 2,000,000

Campus shares are based on the distribution of need as identified in the FY 1983 equipment request and adjusted for the equipment component of the Special Engineering Programs request at Chicago and Urbana-Champaign. The individual campus calculations were reconciled to bring the total request to the \$2.0 million level.

SPECIAL ENGINEERING PROGRAMS  
(\$6,000,000)

Introduction

The economic well-being of Illinois is dependent upon the State's ability to attract and retain high technology industry. The underlying objective to insure achievement of this goal is to provide industry with an adequate source of qualified engineering graduates. While Illinois has enjoyed an outstanding reputation for engineering education in its public universities, the twin crises of faculty shortages and outdated laboratories threaten the State's capacity to respond to the accelerated growth of high technology.

This mounting crisis is prevalent in engineering colleges all across the United States. Inadequate funding for faculty salaries and laboratory equipment has resulted in under-staffed and poorly-equipped schools, just at a time when the demand for engineers from industry is greatest.

Only five percent of the undergraduate students in this country are enrolled in engineering and only a small portion of the engineering students continue on to complete the doctoral degree. By comparison, 35 percent of all undergraduates in Japan are enrolled in engineering and 65 percent of those students pursue advanced degrees.

The current record demand for engineering graduates has led to a substantial increase in the State's undergraduate enrollment in this field during the past five years. Yet as the following table illustrates, Illinois engineering schools in 1980, already stretched to their capacity, were able to enroll less than 12 engineers for every 10,000 people in the State. That ratio places Illinois 41st in the nation, far below the average of other Midwestern industrial states.

UNDERGRADUATE ENGINEERING ENROLLMENT  
PER 10,000 POPULATION

<u>State</u>	<u>Enrollment per 10,000 Population</u>	<u>National Rank</u>
Indiana	21.83	12
Michigan	20.80	14
Kansas	18.21	20
Iowa	17.80	22
Wisconsin	17.31	24
Ohio	14.80	29
Missouri	14.79	30
Illinois	11.85	41
Minnesota	8.44	48

The pressures of an unprecedented surge in students entering engineering schools are compounded by a national shortage of engineering faculty. Of an estimated 20,000 engineering faculty positions in the nation, nearly 2,500 remain unfilled. Freshman enrollments in the nation's engineering programs have risen dramatically in the last five years, while the number of full-time faculty has dropped. In addition, the total awards of engineering doctoral degrees have declined by 13 percent during the same time period. Students flocking toward engineering programs, and then leaving for industry once they have received bachelor's degrees, are leaving a void among faculty ranks.

The growth of the electronics and computer industries has contributed, in great part, to today's huge demand for engineers. Steadily swelling enrollments have pushed the average class size at U.S. engineering schools up markedly over the past decade, according to the National Science Foundation.

Advancements in fields such as computer-aided design and computer-aided manufacturing, micro-electronics, robotics and other high technology areas have left many U.S. engineering schools behind the times in relation to current professional practice. There is an emerging consensus in

universities, the Federal government, and private industry that there is a critical and growing need to replace obsolete and worn-out research apparatus and laboratory facilities in the nation's research universities. Estimates of the instrumentation deficit in U.S. research universities vary, but range upward from \$1 billion.

According to the Ad Hoc Working Group on Scientific Instrumentation of the National Research Council, the result of the equipment deficiency has been a well-documented and growing trend for experimental researchers to leave university laboratories for employment in industrial laboratories. This is usually attributed to the fact that higher salaries are paid in industry than in the universities. This is only partly true. One of the strongest motivations arises from the fact that industrial laboratories are often better equipped and that industry allocates a high proportion of its research budget to new instrumentation.

Other states have already taken steps to address the problems in their engineering schools.

- New Mexico has appropriated \$5 million for upgrading university science and engineering laboratories.
- Arizona State University received \$32 million from its legislature over a five-year period for its engineering programs.
- North Carolina extended \$24 million to five state universities for a micro-electronic center as just a part of its efforts to upgrade engineering programs.
- Florida's State Senate recommended a \$5.8 million lump-sum appropriation to enhance state university engineering programs. A House subcommittee earmarked \$12.3 million for science and technology.
- The University of California system has instituted a differential salary scale for engineering professors.
- The Texas University system has received a special salary raise allocation for professors on its engineering faculty.

In light of the rapidly evolving national trends and in response to the urgent need for a consistent policy toward technical development within the State of Illinois, the Governor appointed a High Technology Task Force to consider the existing strengths of the State and recommend a course of action designed to encourage further industrialization in the areas of "new technologies." The Governor's High Technology Task Force has endorsed the following strategies to engender economic growth in technical areas:

1. Develop four areas: electronics, biotechnology, materials technology (especially coal) and robotics.
2. Establish a research and development commission to appropriate, acquire and designate technological centers, land sites and facilities in close proximity to existing concentrations of technical excellence.
3. Provide \$10 million for each of the next three years to aid development.
4. Emphasize the importance of state universities and their national prestige in attracting and retaining industry.

One of Illinois' greatest assets for the location of high technology industry in the State is the strength of its universities in science and engineering. The College of Engineering at the University of Illinois awards more degrees than any other engineering school nationwide and is consistently a leader in its field. Among the numerous achievements of its faculty and alumni are the following:

- University of Illinois physicist John Bardeen received two Nobel prizes - one in 1956, for inventing the transistor, and one in 1972, for developing the theory of superconductivity.
- The first betatron for high energy physics was developed at the University in 1950.
- Construction of the first visible-spectrum semiconductor laser occurred in 1970.
- Twenty-seven members of the faculty have been elected to the National Academy of Engineering. Three faculty members have received the National Medal of Science.
- More of the chemical engineers considered eminent in the field received their undergraduate education at Illinois than at any other university.
- The American Council on Education ranked the graduate faculty of the University among the top ten in quality of all universities. Eleven University departments, including chemical, civil, electrical and mechanical engineering, and physics, ranked among the top seven nationwide.

The University program described below is designed to insure that the Colleges of Engineering at Urbana-Champaign and Chicago will be able to assume their appropriate roles in the coordinated effort of the State to attract and expand high technology industry in Illinois.

### Enhancement of Engineering Programs at the University of Illinois

The engineering programs at the University of Illinois are recognized to be among the finest in the Nation in terms of the quality of their educational and research efforts. With the growing demand for engineers in the public and private sectors, it is becoming increasingly difficult for the Colleges of Engineering to maintain quality programs while at the same time attempting to respond to increasing levels of student demand. Both Colleges of Engineering have been forced to reduce enrollments in the face of greatly increasing demand -- surely the wrong response for the future of the State and, indeed, the Nation.

To address this problem, the University has developed a plan which calls for \$6,000,000 in new funds to support the systematic revitalization of engineering programs at the Chicago and Urbana-Champaign campuses. The principal objectives of this plan are: 1) to enhance engineering faculty and graduate assistant salary levels to retain current faculty, and to aid in attracting top quality faculty and graduate assistants; 2) to add faculty to reduce student/faculty ratios so that enrollment levels may be maintained; 3) to replace outdated equipment; and 4) to modernize facilities.

### Salary Enhancement

The strength of the University of Illinois' Colleges of Engineering is largely attributable to their ability to attract and retain outstanding faculty. Therefore, it is imperative that the Colleges include in their revitalization plans provisions to preserve and strengthen their ability to successfully compete with other institutions for faculty. This competition has intensified recently due to a decline in the number of doctoral graduates electing academic careers and the extremely attractive salaries offered to existing faculty by industry. It is estimated that these factors have resulted in nationwide engineering faculty shortages of approximately 10%. Peer Colleges of Engineering have recognized this problem and have taken steps to increase their competitiveness in the market for highly qualified engineers by enhancing compensation programs.

Due to the attractive starting salaries offered by industry to baccalaureate engineering graduates, it also is becoming increasingly difficult



to attract qualified students to graduate educational programs. Current stipend levels average approximately \$7,000 per year for half-time appointments. This compares to annual starting salary rates of approximately \$25,000 offered by industry. In response to the situation, the National Engineering Action Conference has posed as a major objective a dramatic increase in graduate student stipends. Several peer institutions have already begun to offer half-time stipends of \$10,000 or more per year. To remain competitive in attracting qualified graduate students the colleges must increase the assistantship base.

In terms of faculty salaries, it is estimated that an average salary of \$34,000 will be required to attract new assistant professors in FY 1984. The FY 1982 average salary for assistant professors at Urbana-Champaign is approximately \$26,900. Assuming average salary increases of 4.0-4.5% for FY 1983 and 12.5% for FY 1984, the \$26,900 figure would rise to approximately \$31,500. The resultant gap of \$2,500 (\$34,000 - \$31,500) is 8% below the target salary for assistant professors.

Providing a supplement for assistant professors alone would create severe salary compaction problems for all other faculty ranks and for graduate assistants. Therefore, the FY 1982 faculty and graduate assistant salary base of \$18.8 million was used to determine the amount of incremental funds to be requested in this category. Applying the 8% salary differential to the \$18.8 million personal services base produces a \$1.5 million increment above the "regular" salary increases in the overall budget request.

#### Additional Faculty and Staff

As more and more Illinois students have sought admission to the engineering curriculum, enrollments have grown to the point where in FY 1981 the University ranked first nationwide with a total of approximately 2,000 engineering degrees conferred. The continued pressures to maintain high enrollment levels have resulted in increased faculty workloads. Using data from the Faculty Credit Hour Study, student/faculty ratios for the HEGIS discipline of Engineering at the Chicago and Urbana-Champaign campuses combined showed an increase of 25% from FY 1974 to FY 1981 for all student levels combined.

UNIVERSITY OF ILLINOIS  
COLLEGES OF ENGINEERING  
FACULTY/STUDENT RATIOS FY 1974-FY 1981

	<u>Lower Division</u>	<u>Upper Division</u>	<u>Grad I</u>	<u>Grad II</u>	<u>Total</u>
FY 1974	17.5	10.9	12.7	9.5	11.7
FY 1981	23.9	15.6	12.3	10.0	14.6
% Change	37%	43%	(3%)	5%	25%

To restore the FY 1981 student/faculty ratio to that of FY 1974, a 25% increase in faculty would be required. An increase of this magnitude would also require a concomitant addition of technical and other support staff. Accordingly, a 25% increase in the total FY 1982 personal services base of the two colleges -- \$24.2 million -- produces an incremental need of \$6 million for faculty and staff expansion. Given the existing shortage of qualified doctoral graduates and technicians needed to achieve a 25% increase in a single year, the faculty and staff additions would be implemented over a three year period at a rate of \$2 million per year.

Equipment Replacement

A key element of engineering education is student exposure to observation and measurement in the laboratory setting. The quality of the laboratory experience is directly related to the adequacy of the research equipment and instrumentation that is available. Over the past several years, the University has been unable to keep pace with the rising costs of increasingly sophisticated technical equipment. High priority must be given to laboratory modernization if the University is to sustain relevant instruction and research based on current technology. Up-to-date equipment would also make the engineering programs more attractive to highly qualified faculty and top graduate students.

The Association of Independent Engineering Colleges indicated in a 1978 study that the annual replacement cost of instructional engineering equipment averaged \$1,500 per baccalaureate degree granted -- a figure that by FY 1984 will increase to \$3,000 per degree conferred. The study was based on an average lifetime of approximately 6.5 years for instructional equipment. Using a similar obsolescence approach based on the more conservative estimate of an 8-year average lifetime for engineering equipment, the University equipment replacement needs are calculated at \$1,250 per baccalaureate degree to provide adequate instructional equipment for students of engineering. With approximately 2,000 BA degrees conferred each year, the total annual equipment replacement need is \$2,500,000. For FY 1981 the Colleges of Engineering together spent approximately \$500,000 on equipment, leaving an unmet need of \$2,000,000. The requested increment is \$1.0 million for each of the next two fiscal years.

#### Facilities Remodeling

The Colleges of Engineering need modern and efficient space to support the high technology efforts of the University and the State. To attract new faculty in such emerging disciplines as computer-aided engineering, polymer and composite materials processing, robotics, and solar energy, adequate instructional and research laboratories specifically designed for these activities are needed. In addition, the realignment of several academic units on the Urbana-Champaign campus into improved and contiguous space would enhance departmental efficiency and professional interaction. The requested funds will permit the Colleges of Engineering to accommodate both the existing faculty and the additional personnel needed to maintain current enrollments and to increase research output.

The funds for this component of the request were derived using the method developed in the University's Space Realignment, Renewal and Replacement (SR<sup>3</sup>) formula. The data for these calculations are displayed in Table 1.

TABLE 1  
COLLEGE OF ENGINEERING  
REMODELING NEEDS

	<u>Chicago</u>	<u>Urbana-Champaign</u>	<u>Total</u>
1. Estimated Replacement Cost (January 1982)	\$22,261,293	\$146,013,603	\$168,274,896
2. Estimated Replacement Cost (January 1984) Annual Escalation Factor -- 9% per year	\$26,268,326	\$172,296,052	\$198,564,378
3. Gross Square Feet (GSF)	228,942	1,486,292	1,715,234
4. Average Cost per GSF (Step 2 ÷ Step 3)	\$ 114.74	\$ 115.92	--
5. Annual Space Rehabilitation and Remodeling Factor [\$/GSF x .667 (2/3 to be remodeled) x .01 (one time per 100 years)]	.7653	.7732	--
6. Funds to be generated by Campus (Step 3 x Step 5)	\$ 175,209	\$ 1,149,201	\$ 1,324,410
7. Total Funds Including Architect/Engineer Fee and Contingency (Step 6 x 1.195)	\$ 209,375	\$ 1,373,295	\$ 1,582,670

Total FY 1984 Program Requirement

The specific elements of the engineering revitalization program and the distribution of the \$6.0 million FY 1984 budget needs are summarized below.

ENGINEERING REVITALIZATION PROGRAM  
(Dollars in Millions)

	<u>Salary Enhancement</u>	<u>Additional Faculty &amp; Staff</u>	<u>Equipment</u>	<u>Remodeling</u>	<u>Total</u>
Chicago	\$0.25	\$0.50	\$0.30	\$0.25	\$1.30
Urbana-Champaign	<u>1.25</u>	<u>1.50</u>	<u>0.70</u>	<u>1.25</u>	<u>4.70</u>
Total	\$1.50	\$2.00	\$1.00	\$1.50	\$6.00

According to this plan, approximately \$1.5 million will be used to provide special salary increases to faculty in the Colleges of Engineering. The increment was allocated between the campuses in amounts approximately equal to each campus' share of the faculty and assistant salary base. The allocation between the two campuses of the \$2.0 million for additional faculty was adjusted to account for greater disparity between student/faculty ratios in FY 1974 and FY 1981 at Chicago as compared to Urbana-Champaign. Campus shares of the \$1.5 million for facilities remodeling approximate the amounts generated by each campus under the SR<sup>3</sup> formula.

If fully funded in FY 1984 this program would permit special salary enhancement of approximately 8% for engineering faculty, the hiring of an additional 30-40 faculty members plus support staff, the replacement of a portion of the outdated equipment, and the remodeling of approximately 12,000-15,000 square feet of space.

SPECIAL SERVICES/FUNDING COMPONENTS

## SPECIAL SERVICES/FUNDING COMPONENTS

Budget requests for essential services provided by the University of Illinois to residents of the State are summarized in this section. These services are outside the University's core functions of instruction, research, and public service. As such, the resource requirements of these services should not compete for educational funding. The request for funds to support these activities totals \$2,070.4 thousand for FY 1984.

Included in the special services section are requests for County Board Matching Funds (UIUC), Cooperative Extension Service (UIUC), Library Computer System (GU), Fire Services Institute (GU), Real Estate Research (UIUC), Division of Services for Crippled Children (UIC-HSC). In addition to the traditional special services programs the University is requesting approval to increase summer session program offerings in Chicago (UIC-UC) and to dedicate the resultant revenues to support those efforts.

LIBRARY COMPUTER SYSTEM  
(\$300,000)

The Library Computer System (LCS) has experienced considerable growth since its adoption by the University of Illinois in 1977. Initial State funding in FY 1978 permitted the University to develop the automated circulation and search system for campus use and to begin conversion of library records to machine-readable form. With subsequent appropriations, service was extended to the State Library, the 18 State Regional Libraries and 14 additional public and private academic libraries in Illinois. Beginning in FY 1982, new funds were approved by the IBHE to expand the network among participating libraries and strengthen interinstitutional resource sharing within higher education. The final increment of the three-year expansion program is required in FY 1984 to support full implementation of the LCS network.

Plans are now underway for the development of an on-line (computer) catalogue. The on-line catalogue will increase the scope of LCS with its ability to search by both subject terms and key words or phrases. A major step in the evolution of the on-line catalogue is the successful interface between LCS and the computer-based bibliographic record. The University of Illinois Library at Urbana-Champaign will be one of the first libraries in the United States to have created this direct link.

In 1979, the UIUC Library was awarded a grant as part of the Library Services and Construction Act for a two-year project to demonstrate a prototype on-line catalogue. Under the grant, the on-line catalogue will be installed on the same computer now providing LCS support. When the on-line catalogue is in place at the UIUC Library, it could be offered to other libraries using LCS.

Grants under the Higher Education Cooperation Act were made to the fourteen participating academic institutions to purchase library record conversion materials and equipment for linkage to LCS. Currently, 410 terminals are on-line and provisions have been made to connect additional terminals to the University computer, including 42 units requested by



Southern Illinois University, one of the four Research and Reference Centers in the State. While the cost of additional terminals is not included in this request, central computer support for these schools is funded by the LCS appropriation to the University of Illinois. The FY 1984 requested amount is needed to enhance the University's system development and programming capabilities.

The indicated incremental State funding is \$300,000 per year for FY 1982-FY 1984, implemented on a recurring basis. The distribution of FY 1984 funds by function is described below.

Computer mainframe (central processing units)	\$150,000
Peripheral equipment (storage, communication controllers, etc.)	90,000
Support (software, maintenance, tapes, etc.)	<u>60,000</u>
Total	\$300,000

COUNTY BOARD MATCHING FUNDS  
(\$672,700)

Under the County Cooperative Extension Law, which was amended by the General Assembly in 1979, the State, through the University of Illinois, is required to provide appropriations from the Agricultural Premium Fund (APF) to match partial allocations from county sources in support of county extension work. State appropriations supplement county funds, and the law provides for a gradual increase in the State's share of matching funds up to a 50-50 ratio by FY 1984.

County or multi-county extension councils, which were established according to guidelines approved by the University of Illinois Board of Trustees, submit budgets to the appropriate county governing board. The budgets are then forwarded to the Director of the University of Illinois Cooperative Extension Service for review and approval. Local funds are maintained in county trust funds and are used along with the APF matching funds in a manner consistent with the approved budgets. Trust funds are used to pay local costs such as rent, some salaries, program materials, local travel, etc., of the more than 100 county extension offices.

The amended County Cooperative Extension Law calls for an increase in the State's matching provision from 45% to 50% for FY 1984. The amount required to comply with the 50% matching requirement is \$672,700. Table 1 gives a more complete description of the distribution of required funds over an eight-year period. Beyond FY 1984 the State will retain its 50% matching level and future State funding requirements will be based solely on the amounts of county sources available.

TABLE 1  
AGRICULTURAL PREMIUM FUNDS  
COUNTY MATCHING

<u>Year</u>	<u>County Sources</u>	<u>APF State Match</u>	<u>APF Increases Over Prior Years Actual &amp; Estimated</u>	<u>Total Budget</u>
1977-78	\$2,157,500 (75%)	\$ 719,200 (25%)		\$ 2,876,700
1978-79	2,351,400 (75%)	783,800 (25%)	\$ 64,600	3,135,200
1979-80	2,539,500 (70%)	1,088,300 (30%)	304,500	3,627,800
1980-81	2,546,700 (65%)	1,371,300 (35%)	283,000	3,918,000
1981-82	2,550,000 (60%)	1,700,000 (40%)	328,700	4,250,000
1982-83 <sup>1</sup>	2,600,000 (55%)	2,127,300 (45%)	427,300	4,727,300
1983-84 <sup>2</sup>	2,800,000 (50%)	2,800,000 (50%)	672,700	5,600,000
1984-85	2,940,000 (50%)	2,940,000 (50%)	140,000	5,880,000

<sup>1</sup>Numbers reflect estimates contained in University of Illinois FY 1983 request.  
<sup>2</sup>FY 1984 and beyond are forecasts based on expected increases in county sources of 8% in FY 1984 and 5% in FY 1985.

COOPERATIVE EXTENSION SERVICE  
(\$200,000)

One of the major functions of the University of Illinois is to provide essential services to the residents of the State through its Cooperative Extension Services (CES). The program currently has a professional staff of 360 county advisors, 150 campus-based faculty, and 23 area advisors who conduct educational programming of a problem-solving nature in four program areas: Resource Development, Agriculture and Natural Resources, Home Economics and Family Development, and 4-H and Youth Development. In addition, area advisors, staff members who are specialists in selected subject-matter fields, provide a capability to CES to concentrate on specific problems in a particular geographical region. This function cannot be accomplished by staff specialists, who provide programs for the entire State, or by county advisors.

As a part of the University's FY 1984 budget request, \$200,000 will be requested for the expansion of the Cooperative Extension Services program. This request has two components:

- 1) Economic Development in Southern Illinois
- 2) Area Extension Advisors

The counties in southern Illinois tend to be economically disadvantaged in comparison with the rest of the State. It is the intention of the University of Illinois to expand and improve its services to the people in southern Illinois. The expanded educational program of CES would address the problems of economic development, small business management, business and industrial development, improvements in services of local governments, and tourism development. Area advisors, with the cooperation of county extension advisors and extension specialists now on staff, will be employed to work with county staff, with State staff, and directly with local residents to develop and to deliver educational problem-solving activities and programs designed to enhance economic development in southern Illinois.

In addition to expanded activities focusing on southern Illinois, there is a need for the addition of two area extension advisors to the University's Cooperative Extension program. Farm management concerns, particularly those dealing with financial management, are especially critical now. At present there is only one area advisor in farm management and marketing who is located in the southern part of the State. A second person would provide program assistance to counties in central Illinois. There is also a great need for an area advisor in communications. Such an individual would assist county staff, particularly with regard to the use of mass media, to better serve people in the heavily populated regions of the State.

FIRE SERVICE INSTITUTE  
(\$75,400)

Beginning in FY 1981 the University of Illinois received a direct appropriation from the Fire Prevention Fund for the operation of the Illinois Fire Service Institute. Prior to this, the Fire Service Institute had been operated through a contract with the State Fire Marshall.

The monies received from the Fire Prevention Fund are used for three major purposes:

1. To continue the ongoing programs of the Fire Service Institute, formerly operated through contractual arrangements with the State Fire Marshall.

2. To provide adequate teaching and training facilities for the Institute.

3. To permit program growth and improvement.

As detailed in past budget requests, the need for adequate instructional and training facilities is acute. Current facilities are inadequate, office and classroom space is scattered across the Urbana-Champaign campus, and only one training facility, the Fire Tower, exists on the primary instruction site. Thus, after the operating needs of the current instructional programs have been met, the majority of new funds must be used to construct an adequate training facility. A modest amount of new funds are also available for program growth and improvement, with major program development activities to follow, once sufficient facilities exist.

Based upon current revenue projections, growth of approximately 6% is projected for the Fire Prevention Fund for FY 1984, raising the total in the Fund to \$7.1 million. The University of Illinois share of this amount (1/8) would be approximately \$890,000. The FY 1983 appropriation is expected to be \$814,600, resulting in an increment of \$75,400 available for FY 1984.

Of this amount, approximately \$40,000 would be required to fund normal salary and price increases, leaving roughly \$35,000 available for additional program support. In view of the continuing top-priority need to secure adequate instructional and training facilities, it is expected that these additional program funds will be added to the approximately \$325,000 currently available for facilities acquisition.

OFFICE OF REAL ESTATE RESEARCH  
(\$31,000)

The Office of Real Estate Research (ORER) has three primary functions:

1. It undertakes and fosters research on problems related to real estate in the State of Illinois.
2. It communicates the results of applied research to the consumers and producers of real estate services through publications and professional education activities.
3. It promotes the ongoing development of real estate education at the University of Illinois at Urbana-Champaign.

The ORER was created in the spring of 1980 as a project in the Bureau of Economic and Business Research which is, in turn, within the College of Commerce and Business Administration at the University of Illinois at Urbana-Champaign. For its first fifteen months of operation, the ORER was funded by grants from the Illinois Real Estate Educational Foundation (REEF), an arm of the Illinois Association of Realtors. Beginning in FY 1982 its operations have been financed by a special fund in the State Treasury, the Real Estate Research and Education Fund. Monies in this fund come from licensing fees paid by the real estate industry and from interest from the Real Estate Recovery Fund, and not from general tax revenues. The Real Estate Research and Education Fund was established during the 1981 session of the General Assembly under legislation sponsored by the Illinois Association of Realtors.

The sum of \$170,000 was appropriated for FY 1982; and \$199,000 will be available for FY 1983. Of that amount, approximately half (\$104,000) is devoted to the operation of the Office itself (staff and supplies), and half (\$95,000) is earmarked for research grant awards to fund research projects carried out by faculty members at institutions throughout the State.

Current revenue projections indicate that an additional \$31,000 will be available for appropriation in FY 1984. Of this amount, approximately \$11,000 will be required to fund salary and price increases for support of the Office itself. The remaining \$20,000 will be made available for additional research grant awards.

DIVISION OF SERVICES FOR CRIPPLED CHILDREN  
(\$391,300)

The Division of Services for Crippled Children (DSCC) provides hospital services and medical braces and appliances to meet the medical needs of children in Illinois who cannot otherwise afford to secure them. As with other major University operations which require specialized services or equipment, DSCC has encountered recent inflation rates well above those of the Consumer Price Index. The following table demonstrates the impact of inflation in recent years, based upon Chase Econometrics April, 1982 data:

Inflation Rates - Medical Services

	<u>Medical Services Component of CPI</u>	<u>CPI</u>	<u>Personal Consumption Expenditure Index</u>	<u>Univ. of Ill. Price Increase</u>
FY 1979	9.1	9.4	8.0	5.0
FY 1980	10.8	13.3	9.8	6.0
FY 1981	10.2	11.5	9.3	7.0
FY 1982	12.2	8.9	7.6	4.0
FY 1983 est.	11.3	6.6	6.6	-0-
FY 1984 est.	7.9	6.7	5.0	8.5 request

Clearly, with no incremental price increase funding available for FY 1983, the service levels provided by DSCC will decrease in the year ahead. By modifying some current programs, by utilizing other sources of funds as much as possible, and by reallocating approximately \$75,000 in funds now supporting administrative activities, the Division estimates that FY 1983 services can be maintained at 95% of FY 1982 levels. Such a reduction comes at the very time when national and State economic circumstances produce increases in demand for DSCC services.

At a minimum, the Division seeks to return FY 1984 services to the FY 1982 level. To do so will require accounting for inflationary costs for both inpatient and outpatient medical services, and DSCC staff have estimated that an increase of 12.2% in the FY 1982 base will be required.



A total of \$937,400 will be required, of which \$655,800 is included in the General Price Increase of 8.5%. An additional 3.7% increment--\$281,600--is therefore required as a special supplement.

DSCC also provides medical braces and appliances for its clients who require them. There is wide variation in the costs for individual items, from \$40 for a pair of corrective shoes to more than \$2,500 for a wheel-chair custom made to meet the needs of a handicapped child. Average costs for these implements have risen at rates steeper than those encountered for general medical services, as shown in the following table:

<u>Fiscal Year</u>	<u>Number of Units</u>	<u>Average Cost</u>	<u>% Increase</u>
1979	6,100	\$145	
1980	8,441	159	9.7%
1981	8,866	182	14.5%
1982 est.	8,622	210	15.4%

Based on these data and the projected inflation information cited earlier, DSCC staff estimate that costs for medical appliances will increase by 15% for FY 1983 and 11% for FY 1984, raising the average cost to \$268. An increase of this magnitude would raise the FY 1983 base amount of \$623,000 for braces and appliances to an FY 1984 need of \$785,600--an increment of \$162,600. Of this amount, \$53,000 would be provided by the General Price Increase, leaving a need of \$109,600 to be met by a supplemental increase.

Together, the \$281,600 required for medical services plus the \$109,700 required for medical appliances total \$391,300 in supplemental funding to return FY 1984 service levels to the level achieved in FY 1982.

CHICAGO SUMMER SESSION ENROLLMENT  
(\$400,000)

For several years the targeted Summer Session enrollment at UIC-UC has been 6,700 students. As depicted in Table 1, however, the demand for coursework during the summer has been so high that the actual enrollment has consistently and substantially exceeded the target every year since 1977. Enrollment grew by about 500 students in 1980 and again in 1981. Demand in 1982, as evidenced by the record numbers seeking to register, was such that had the courses and classroom seats been available, enrollment could have exceeded 8,500 students.

The campus target of 6,700 students has been constrained by the budget available for faculty salaries. Thus, while the enrollment has increased in terms of headcount, the credit hours per student have been limited due to the limited number of courses and sections of the most popular courses (Table 2). Continuing UIC-UC students account for approximately 81% of the summer enrollments. Many UIC-UC students have integrated their work and class schedules during the academic year and continue to do so during the Summer Session. Availability of appropriate courses during the Summer Session often can reduce the time to complete a degree for these students by three to nine months.

Although the campus target of 6,700 could almost be met by serving only the continuing students, new students who attend during the Summer Session are an important addition to the campus. Studies show that approximately 45% to 48% of the new students during the summer continued into the fall quarter (Table 3). In 1981, two-thirds of the new graduate students returned in the fall, many of them as full-time students. A large portion of these students are metropolitan area residents who began their study elsewhere. The Summer Session at UIC-UC offers them an opportunity to continue their education which may be interrupted if they had to return to a more distant school. Obviously, many decide, after their summer experience, to continue their studies at UIC-UC.

In order to continue serving both continuing and new students during the Summer Session, the campus estimates a target of 8,700 students will be necessary for FY1984, and a substantial expansion of course offerings will

be required. This represents an increase of 2,000 students above the target for the past several years. In summer, 1983 this increase of 2,000 students would be expected to generate approximately \$400,000 in tuition income above that which 6,700 students may be expected to generate (Table 4). The campus requests an increased allocation of \$400,000 from the tuition income in order to fund the expansion.

The Summer Session internal budget provides funds for faculty salaries. This budget remained stable, except for salary increases, for several years, but has been seriously eroded by the campus-wide budget reductions of the past two years. These reductions plus the effects of a continuing shift to high-demand programs will make it extremely difficult for the campus to offer enough courses to serve more than continuing students in 1983 without the additional funding requested in this proposal.

A significant portion of the requested funds will provide additional courses in the College of Business Administration where demand each year exceeds capacity by 15 to 18 courses, with an expected enrollment of 30 to 35 students per course (Table 5). Engineering is experiencing similar demand for both undergraduate and graduate level courses. Mathematics and the sciences are faced with increasing demand for basic undergraduate courses, courses to support business and engineering programs, and increasing demand in the area of computer science. Undergraduate core courses in English as well as other courses in virtually every department for which demand exceeds capacity are consistently oversubscribed in the Summer Session.

These additional funds also will enable the campus to offer courses designed to attract recent high school graduates in the Chicago area to begin their college education during the summer at this campus. The campus currently offers a very modest program along these lines, but lack of funding has inhibited an adequate degree of innovation and experimentation.

The \$400,000 in this request will permit the campus to offer 85 to 100 additional courses with a total of about 2,000 more classroom spaces than would otherwise be possible in 1983.

Table 1  
SUMMER ENROLLMENTS (1976 - 1982)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
<u>Undergraduates</u>							
New	189	664	743	603	730	718	653
Readmits	338	580	590	474	418	524	520
Continuous	4,963	4,708	4,269	4,534	4,767	5,083	4,886
Total	5,490	5,952	5,602	5,611	5,915	6,325	6,059
<u>Graduates</u>							
New	167	129	270	167	190	167	204
Readmits	38	18	46	52	62	58	60
Continuous	869	933	950	1,181	1,340	1,452	1,420
Total	1,074	1,080	1,266	1,400	1,592	1,677	1,684
<u>Total</u>							
New	356	793	1,013	770	920	885	857
Readmits	376	598	636	526	480	582	580
Continuous	5,832	5,641	5,219	5,715	6,107	6,535	6,306
Total	6,564	7,032	6,868	7,011	7,507	8,002	7,743

Table 2  
Summer Enrollment  
Quarter Credit Hours

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Undergraduate	49,301	49,141	45,595	45,764	49,025	50,904	47,126
Graduate	9,146	8,705	9,503	10,837	12,089	12,313	11,821
Total	58,447	57,846	55,098	56,601	61,114	63,217	58,947
Credit Hours per Headcount	8.9	8.2	8.0	8.0	8.1	7.9	7.6

Table 3  
Fall Term Profile for  
New Summer Students Continuing into Fall Term

	<u>F79</u>	<u>F80</u>	<u>F81</u>
<u>Undergraduate</u>			
Full-Time	288	361	251
Part-Time	189	131	250
Total	477	492	501
Academic Performance (G.P.A.)	N/A	N/A	3.5
<u>Graduate</u>			
Full-Time	44	64	41
Part-Time	108	111	109
Total	152	175	150
Academic Performance (G.P.A.)	N/A	N/A	4.4
<u>Total</u>			
Full-Time	332	425	292
Part-Time	297	242	359
Total	629	667	651
Academic Performance (G.P.A.)	3.6	3.7	3.7

Table 4  
Summer Session Tuition Income

	<u>Net Tuition Income</u>	<u>Headcount Enrollment</u>
1980	\$ 990,742	7,507
1981	1,167,095	8,002
1982	1,318,570	7,743

Estimated Tuition Income  
Summer Session 1983\*

<u>Headcount Enrollment</u>	<u>Anticipated Net Tuition</u>
6,700	\$1,391,000
8,700	1,791,000

\*Assumes tuition rates in effect for FY82-83 and historical averages for undergraduate and graduate tuition waivers in Summer Session.

Table 5  
Analysis of Summer Session Program

<u>Faculty</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u> (estimated)
Salary Budget (in millions)	\$ 1.00	\$ 1.09	\$ 1.03	\$ 1.35
FTE	243.13	245.92	214.55	297.5
 <u>Number of Sections Offered</u>				
100 Level	308	315	280	310(est.)
200 Level	225	239	198	220(est.)
300 Level	177	169	139	160(est.)
400 Level <sup>1</sup>	<u>114</u>	<u>101</u>	<u>146</u>	<u>160</u> (est.)
Total	824	824	763	850(est.)
 <u>Selected Offerings</u>				
<u>Number of Sections</u>				
Business	34	25	24	40(est.)
Engineering	95	117	109	120(est.)
English	19	21	13	25(est.)
Math	29	28	25	35(est.)
Sciences <sup>2</sup>	200	225	202	225(est.)

<sup>1</sup>Excludes independent study.

<sup>2</sup>Science offerings include Biology, Chemistry, Geology, and Physics courses.



APPENDICES

Areas of Emphasis in an Improved Funding Climate

Compensation Improvement - \$19.0 million

Compensation, defined as cash salaries plus employer (State/University) contributions to fringe benefit plans, must be made commensurate with the quality of the University of Illinois faculty and staff in order to facilitate the recruitment of new personnel and to encourage the retention of existing personnel. The University's dual objectives during the last four years have been to achieve at least a third place standing within the Big Ten on average faculty compensation and to attain parity with competing employment markets and with State Code Departments for its nonacademic employees.

The gap between the University's average faculty compensation and that of the third place institution remained relatively constant at approximately 5% between FY 1979 and FY 1982. While the funding request contained in the Compensation Section of this document, if fully supported in FY 1984, would move the University to third place in the Big 10 with respect to cash salaries, no provision is made to address the overall gap in compensation. To eliminate the 5% gap which presently exists in total compensation between the University and the third place institution, if expressed in current dollars, would require an infusion of \$19.0 million.

To enable the University to reach an overall compensation level commensurate with the quality of the institution, a \$19.0 million increment in the University's personal services base is necessary. This estimate is based upon the University's total State funded personal services base weighted by the specific employee groups under consideration.

Equipment - \$8.0 million

In the past several years the University's backlog of obsolete equipment has grown substantially. A large portion of this equipment was purchased during the growth period of the 1960's and since that time has become obsolete due to normal wear and tear and rapid technological change.

The inability to replace equipment poses a serious threat to the quality of instructional and research programs and impedes the University's capacity to attract high quality students and faculty. The failure to

replace obsolete equipment translates directly to a marked inability to keep up with advances in many academic disciplines. Further, in the present restricted funding atmosphere, the impaired ability of those units operating with limited equipment to compete for research funds can mean stagnation instead of growth in program quality and in faculty development.

The University began its equipment deficiency studies in FY 1972 to determine the value of obsolete equipment requiring replacement. By assigning useful life values (which average 10 years) to items on the University's equipment inventory, it is possible to determine the total amount of equipment requiring replacement in a given year. To the extent that sufficient funds are not provided to replace one year's obsolete equipment, a deficiency exists.

Previous State appropriations for equipment acquisition have helped somewhat in easing this equipment obsolescence problem; however, in recent years there have been no appropriations beyond general price increases for equipment replacement. Obsolescence levels continue to increase; as a result, the equipment deficiency is becoming an ever greater threat to the University's quality. Replacing obsolete equipment has, therefore, become a high priority concern throughout the University.

The University presently estimates that the replacement value of its equipment in all but auxiliary departments and the libraries is approximately \$300.0 million. Because the University has attempted to secure nearly half of its equipment needs from non-State sources, the replacement value of equipment assigned to the State can be established at roughly \$150.0 million. If a 10-year depreciation cycle is assumed, then annual State-funded support for equipment should be roughly \$15 million. Because the FY 1983 State appropriation for equipment (exclusive of library books) is approximately \$5 million, a \$10 million base deficiency therefore exists.

If revenues are increased in FY 1984 and additional funding becomes available to the University of Illinois, it is essential that this equipment deficiency be reduced more rapidly than the \$2.0 million contained in the regular budget request would allow. Given a total annual deficiency of approximately \$10 million and assuming funding of the \$2.0 million in the regular request, a balance of \$8.0 million remains to be funded.

Operation and Maintenance Deficiency - \$9.3 Million

In the past decade a combination of factors--spiraling inflation, insufficient funding, physical plant staff reductions, addition of facilities, and mandatory increases in prevailing salary rates--have resulted in a large accumulation of deferred maintenance projects. Consequently, projects which in the past were minor in scope and cost, now require immediate attention and will be more expensive to repair.

Actual O & M expenditures in FY 1981 were \$58,041.2 thousand. When prevailing inflation rates are applied to the FY 1971 base, the funds required in FY 1981 to provide services at the FY 1971 level are \$77,024.7 thousand. These data indicate an \$18,983.5 thousand gap between actual expenditures and those necessary to operate sufficiently in FY 1981 at the FY 1971 level.

It is reasonable to assume that some efficiencies in productivity have been accomplished since FY 1971. Therefore, an adjustment of 1 percent per year has been applied to account for this factor. In addition, the University has generally received sufficient funding in the past decade for utility costs and those costs are, therefore, not considered in the calculation of the O & M deficiency. After these adjustments are incorporated, the resulting total deficiency in FY 1981 is \$7,526.4 thousand. When this deficiency is inflated to FY 1984 dollars, the resulting gap is \$9,255.2 thousand.

The State has recognized the severity of the O & M deficiency in the past, and the University has received roughly \$2.0 million to partially offset the accumulated deficiency. Without those funds, the cumulative deficiency would be more than \$11 million.

The regular FY 1984 budget request includes funds to support essential operations of University facilities. While separate funding was not formally requested to reduce this deficiency, the University continues to place high priority on the eventual elimination of this funding shortfall in the crucial areas of physical plant operations and maintenance.

Capital - \$90.0 million

The University's FY 1984 Capital Budget Request primarily consists of major remodeling and SR<sup>3</sup> projects. The steady deterioration of facilities because of age and insufficient funding for operation and maintenance has forced the University to place its highest priorities on the renovation and repair of existing facilities. This need is heightened by the complete absence of any new remodeling funds for FY 1983. The estimated annual cost of minor remodeling needs for FY 1984 is \$13.9 million, based on an estimated January 1984 University facilities replacement cost of \$1.9 billion. The magnitude of these remodeling needs, combined with the paramount need to preserve and protect the investment already made in existing facilities has meant that remodeling projects have occupied the highest capital budget priorities.

Changing program emphases, shifting student enrollments, and the need for the University to replace some existing facilities for which remodeling is not feasible have meant that some new construction projects have also attained high priority. In addition, vast technological changes in some areas such as engineering, agriculture, the health sciences, and others have heightened the need to replace other facilities as soon as possible.

Recognizing that the current State fiscal situation makes difficult the funding of new major building projects, the University is nonetheless prepared to forward these projects if the State's capital financing improves or non-state funding sources are identified. An example of a new building proposed in response to changing student demand is the Commerce Building at the Urbana-Champaign campus. The approximately 88,000 NASF building would provide sufficient space to house additional permanent faculty needed to restore the student/staff ratio to an appropriate level following the increase in Commerce enrollment during the last decade.

The Electrical Engineering Department at the Urbana-Champaign campus is now housed in five buildings, two of which were constructed prior to the turn of the century. Almost all of the research space in these buildings is substandard for modern experimentation in electrical engineering and allied fields. If the University is to continue its research excellence in such high technology areas as microelectronics, semiconductors, lasers, and quantum electronics, the Department requires a new facility. A research and office building of approximately 60,000 NASF with some "clean room" laboratory space would fulfill the Department's immediate and future research needs.

Construction of an Ambulatory Care Facility at the Chicago Health Sciences Center will provide an attractive outpatient care alternative for health care consumers in the Chicago metropolitan area. Revenues generated from this facility would significantly enhance the self-sufficiency of the Center's outpatient services units, while providing students in the fields of medicine, nursing, and pharmacy an opportunity for supervised practical instruction in a sophisticated group care setting. Approximately 80,000 NASF is needed to house the variety of health care specialties associated with the group practice.

The demand for graduate education in high technology fields has risen dramatically over the past decade. To meet this demand, the Chicago University Center is studying a proposal to construct a laboratory and office building designed to address the needs of expanding graduate enrollment in the fields of engineering and sciences. Further investigation of the proposal in the coming weeks will define the scope of the project and determine specific costs and occupancy plans for the facility.

#### Library - \$2.0 million

The mission of the University libraries is two-fold. First and foremost, they have a responsibility to the students and faculty of the University to provide material to support instructional programs and research activities which take place on the campuses. The collections must contain a wide variety of material, both current and historical, and cover as many areas as the programs offered. Second, the library has a responsibility to the State as a major resource and research center for all State institutions including other colleges and universities, State agencies, and public and special libraries. However, the funding levels of the libraries reflect only the campus mission and a portion of this State mission.

Price increases affecting library acquisitions have grown precipitously in the past few years due to inflation and the devaluation of the dollar in foreign countries during the 1970's. The University has received support from the State for library acquisitions through general price increases and occasionally through special appropriations for library materials. However, this support has been insufficient to keep pace with rapid price escalation. The result is that the collection currency is

being seriously eroded which, in turn, undermines the ability of the libraries to support both the University's and the State's service activities.

The cost of serials and microforms exemplifies the overall acquisitions problem. The price indices of American periodicals which appear annually in the Library Journal are based mainly on journals received by the University of Illinois Library. An analysis of the indices for the 1970-79 period shows that scientific journals have increased an average of 14.3% each year; the range over the ten-year period is 9% to 23.5%; the median is 14.1%. By comparison, the annual rate of inflation as represented by the Consumer Price Index ranged from approximately 3% to 11% over the same period.

The library also faces large scale and very expensive problems in collection maintenance and preservation as adverse storage conditions and the inherent chemical instability of most printing paper manufactured in the last century have taken their toll on the collections. Historically, the library has directed most of its maintenance and preservation efforts into binding. The Binding Department is responsible for in-house mending, repair, rebinding, and some other operations that had previously been performed in the Catalog Department and in other units of the library. Meanwhile, binding costs have increased by more than 50% in the last five years and have assumed an increasing share of the library budget with the proliferation of periodicals and serials sent for binding.

A comparison of the actual library acquisitions budget with a theoretical budget based on increases in the Consumer Price Index, indicates a cumulative deficiency of almost \$2.0 million over the past decade. If additional revenues become available, it is essential that approximately \$2.0 million be appropriated to begin recovery from the University's library materials deficiency. Since the libraries provide necessary support to academic programs and research activities, it is absolutely vital that this deficiency of library funding be reduced so the quality of all University programs can be preserved.



Additional Staff for High Demand Areas - \$10.5 million

Both the Chicago University Center and Urbana-Champaign campuses have experienced substantial shifts in enrollments during the past decade, even though overall enrollment levels have grown only slightly. In some cases, these shifts have come from disciplines with relatively low instructional costs to those with relatively high costs. Instructional funds cannot follow enrollment shifts on a one-to-one basis, since a comprehensive University must offer quality programs in a broad range of disciplines, requiring the maintenance of certain fixed, or base, costs regardless of marginal changes in enrollment.

For several years, both campuses have included "enrollment demand shift" funding requests among their very highest priority academic program needs; and both campuses have such requests in the FY 1984 preliminary budget request. In both cases, however, the FY 1984 component reflects only a portion of the total need. At Urbana-Champaign, for example, the total need for additional staff is \$2.9 million, while the FY 1984 request is for \$600 thousand. Faculty and staff needs in other areas, particularly Veterinary Medicine and Law total some \$3 million. At the University Center in Chicago total needs approach \$1.2 million, with \$350 thousand in the FY 1984 request. Other additional staff needs total \$600 thousand with \$150 thousand sought in FY 1984. Finally, a total of \$6 million is required for new faculty and staff in Engineering, with \$2 million requested as part of the Special Engineering program.

In total, additional faculty and staff needs which are not met in the FY 1984 budget request reach a level of \$10.5 million.

## RETIREMENT

Beginning in FY 1979 a significant improvement in the financing of the State Universities Retirement System (SURS) was achieved when the appropriation level was increased from the "Net Payout" amount to the "Gross Payout" amount. In essence this improvement meant that instead of providing an appropriation which, when combined with an amount contributed by retirees themselves, was sufficient to meet the pension costs of SURS retirees (the so-called "Net Payout" level), the State appropriation was sufficient to cover the entire pension costs for retirees, thereby permitting a modest amount to be set aside to cover the future pension costs of those still employed. In FY 1980, a further improvement in SURS funding was achieved, when the appropriation level exceeded the "Gross Payout" requirement, making a somewhat larger amount available to cover future pension costs. In FY 1981, the "Gross Payout" level was again achieved. These funding improvements, combined with significant improvements in interest earnings on SURS investments enabled the SURS ratio of assets to liabilities grow from 46% in FY 1975 to 54% in FY 1981.

This progress in Retirement funding was abruptly halted in FY 1982 when the SURS appropriation was cut below the Net Payout amount, to a level which represented only 62% of the Gross Payout requirements--a reduction of \$27.3 million. The SURS appropriation for FY 1983 was again held significantly below the Gross Payout amount, and was set at a level of 62.5% of Gross Payout.

While SURS interest earnings in recent years have been higher than customary, and have been adequate to cover the costs of pension requirements for those already retired, continued funding of SURS at so low a level simply cannot be tolerated.

An opportunity exists in FY 1984 to make a substantial improvement in funding for SURS, and to take a major step towards restoring the level of funding which appeared to have been set as the minimum acceptable level in

the FY 1979-81 period. As discussed briefly in Part I of this document, some \$20.5 million in funds required in FY 1983 to pay for capital facilities amortization costs for the Illinois Building Authority (IBA) will no longer be required in FY 1984, because the IBA bonds will be retired. Therefore, the \$20.5 million, which is already within the higher education funding base, will be available for other uses.

As the following table indicates, this \$20.5 million could help to make a substantial improvement in SURS funding. Note that if the full \$20.5 were applied to SURS needs, it would raise the FY 1983 appropriation level to almost \$69 million--some 75% of Gross Payout, and a funding level which would be above that achieved by any other State-funded retirement system in FY 1983.

At a minimum, the current SURS funding level should be augmented by the addition of \$20.5 million in funds to be made available from the completion of the IBA commitments. Such an action would enable SURS to achieve funding at 75% of the "Gross" level. In any case the FY 1984 budget process must give high priority to bringing SURS funding to the level matched by other State funded systems, and to exceed the 70% level maintained by those systems in FY 1983 by as great an amount as the overall State budget will allow.

For the University of Illinois in FY 1984, the full gross Payout level would require \$47.9 million--as against the \$24.4 million appropriated in FY 1983, or an incremental need of \$23.5 million. Following the long-standing policy of the University's Board of Trustees, the University's formal budget request for FY 1984 SURS funding is placed at the statutory level (full-funding). For the University, this level is \$77.4 million in FY 1984, for an incremental request of \$53 million.

Table II-1  
 Projected FY 1984 State Universities Retirement System Funding Levels  
 (Dollars in Millions)

FY 1983 Appropriation Level = \$48.3 = 62.5% of Gross Payout Amount			
<u>FY 1984 Funding Benchmarks</u>		<u>Funding Outcome</u>	
62.5% of Gross Payout	=	\$57.5	= Maintain FY 1983 level
70% of Gross Payout	=	64.4	= Achieve level of funding maintained by other State systems in FY 1983
75% of Gross Payout	=	69.0	= Meet minimum level likely to be achieved by other systems in FY 1984
Net Payout level	=	77.0	= Approximately 85% of Gross Payout
FY 1984 Gross Payout Level	=	92.0	Would match level achieved in FY 1979-81

Addition of \$20.5 million reallocated from IBA rental funds to the FY 1983 appropriation would achieve 75% of Gross Payout requirement

Bases and Calculations for  
FY 1984 Continuing Components Increases  
(Dollars in Thousands)

## I. Compensation Improvement

A. FY 1982 Personal Services Base:	\$299,302.2
B. FY 1983 Personal Services Base:	302,870.0
C. Calculations for FY 1984 Increment	
1. Annualization of FY 1983 Mid-year Increase	
FY 1982 Base x .90 x .03 x 6/12 =	
\$299,302.2 x .90 x .03 x 6/12 =	\$ 4,040.6
2. Regular 6.5% FY 1984 Increase:	
(FY 1983 Base + Annualization) x .95 x .065 x 10/12 =	
(\$302,870.0 + \$4,040.6) x .95 x .065 x 10/12 =	15,793.1
3. Market Recovery of 2%:	
(FY 1983 Base + Annualization) x .95 x .02 x 10/12 =	
(\$302,870.0 + 4,040.6) x .02 x 10/12 =	4,859.4
4. Balance to Achieve Third Place: 4%:	
(FY 1983 Base + Annualization) x .95 x .04 x 10/12 =	
(\$302,870.0 + \$4,040.6) x .95 x .04 x 10/12 =	<u>9,718.8</u>
5. Total Compensation Request (1 + 2 + 3 + 4)	\$34,411.9

## II. General Price Increase

A. FY 1983 Base :	\$45,090.1
B. FY 1984 Percentage Increases 6.5% Regular, 2% Market Recovery	
C. Calculations: 45,090.1 x .065 = \$2,930.9	
45,090.1 x .02 = 901.8	
D. NOTE: The General Price Increase Base includes the following objects of expenditure: Contractual Services, Travel, Commodities, Telecommunications, Operation of Auto Equipment. Awards & Grants; Equipment; Artificial Appliances; Hospital and Medical Services; and Permanent Improvements, less the amounts for utilities and library acquisitions.	

III. Utilities Price Increase

A. FY 1983 Base = \$32,020.4

B. FY 1984 Percentage Increase = 20%

C. Calculation:

$$\$32,020.4 \times .20 = \$6,404.8$$

IV. Library Acquisitions

A. FY 1983 Base = 5,374.3

B. FY 1984 Percentage Increase = 15%

C. Calculation:

$$\$ 5,374.3 \times .15 = \$ 806.1$$

PART III

FISCAL YEAR 1984 CAPITAL BUDGET REQUEST

UNIVERSITY OF ILLINOIS CAPITAL BUDGET REQUEST  
FY 1984

Introduction

The University's FY 1984 Capital Budget Request is comprised of three major segments: (1) Regular, (2) Energy Conservation/Fuel Conversion, and (3) Food for Century III. The Regular segment of the request includes remodeling, renovation and construction projects necessary to support the University's ongoing programmatic activities. The Energy Conservation/Fuel Conversion segment represents a special effort initiated in FY 1981 to help control spiraling energy costs through retrofit improvements to the building and mechanical systems. The third segment of the request consists of those projects considered essential to the continued progress of the Food for Century III program. The total request for the major budget segments in FY 1984, excluding cost estimates for the fuel conversion projects at the Chicago campuses, is \$36,423,700. Descriptions of projects comprising the three segments of the Capital Budget Request follow in the same order as described above.

This section of the document presents a description of the Regular segment of the FY 1984 Capital Budget Request. The Energy Conservation/Fuel Conversion segment is presented in a separate section immediately following the Regular request material, and a third section describes the University's FY 1984 Food for Century III Program.

Each project in the request has been reviewed by the campus and University administration and integrated into a set of University capital budget priorities for Regular Capital, Energy Conservation/Fuel Conversion, and Food for Century III. The priority list is an assessment of the relative need for each project as compared to other capital projects. In addition, the priority list reflects a level of funding which meets the University's highest priority needs, yet is realistic and defensible in light of existing economic conditions and the State's fiscal situation.



### Emphasis of the FY 1984 Regular Capital Budget Request

Table 1 presents a summary of the proposed projects for FY 1984 in priority order. The first two priority projects are emergency projects which must receive timely attention. The roofing surface on the major section of the Peoria School of Medicine is failing. Repairs have been made in the past on selected trouble spots, but given the results of test cuts made recently, it is now apparent that the roofing surface of the lower roof must be replaced. The consequences of not addressing the roof's continued deterioration in the near future include health and safety hazards for students and staff and significant interior damage to the structure, equipment, and furnishings.

The Chicago campus generates hazardous chemical and radioactive waste in the course of their research, instructional, and clinical activities. The volume of hazardous waste produced by the campus, as well as rapidly changing environmental restraints placed on disposal methods and agents, has made efficient hazardous waste disposal difficult. At this time the Health Sciences Center has approximately two years of waste stored at various locations on campus. Following a study of the waste disposal problems of both campuses, the study committee recommended purchase and operation of an incinerator at a site in the Health Sciences Center Steam Plant yard. The prompt implementation of this project will alleviate current hazardous waste disposal problems and provide an effective means for disposing of hazardous waste in the future.

The top priority project, exclusive of the emergency projects, for the University involves a major upgrading of the Chicago University Center Library. Planning funds are requested to complete architectural and engineering specifications for a major renovation of the main library building. After 15 years of operation, this facility must undergo significant physical modifications if it is to continue to serve the campus effectively. Changes in academic program mix and the initiation of evening programs have altered the patterns of library use. The need to realign the existing space configuration whereby the major service areas are on the first floor and the more specialized services are located on the upper floors makes a major renovation project the preferred solution to the University Center Library problem.

Remodeling funds are requested in conjunction with the University Center library planning project to relocate the Office of Admissions and Records which currently occupies library space. Once this unit is relocated, valuable library space can be returned to its intended function.

The next five projects show the University's emphasis on remodeling instructional space to better suit the programmatic needs of the units housed in the areas while maintaining essential campus facilities. Included in these projects are: the third phase of a multi-phased project to renovate completely the English Building; planning for installing air conditioning and improving the ventilation system in the Pharmacy Building; the second phase of remodeling space in the vacated Hospital Addition; upgrading electrical service to the Roosevelt Road Building; and planning the repair and rehabilitation of the Auditorium roof.

Project priorities 11 through 14 and 18 through 21 comprise the Space Realignment, Renewal and Replacement request for FY 1984. These projects are necessary to preserve the structural integrity of the University's physical plant and to meet program related space realignment requirements.

The remaining projects in the Regular Capital request answer the need for the construction of a replacement facility for a rapidly deteriorating pilot training structure and extension of a chilled water line from the Library Air Conditioning Center to the Animal Sciences Laboratory.

Table 2 presents a breakdown of the FY 1984 capital projects by budget category and campus. The generation of SR<sup>3</sup> amounts for each campus is presented in Table 3 and a list of SR<sup>3</sup> projects appears in Table 4. Table 5 presents the cost per square foot of each building and major remodeling project. Table 6 shows the future implications of projects requested for FY 1984.

#### Status of Ongoing Projects

Table 7 provides a summary of actions on capital budget requests from FY 1979 to FY 1983. The University's capital appropriation (new projects) for FY 1982, excluding Food for Century III, totaled \$13,877,000. As of August 15, 1982, the Governor has "frozen" \$2,512,300 of the appropriations.

The release of these funds depends on the level of interest rates on long term government bonds and the State's fiscal situation. No indication has been given as to when these funds will be released. Table 8 shows the funding status of each FY 1982 project. Table 9 shows the construction status of all building and major remodeling projects.

The General Assembly did not pass any legislation for the funding of Regular Capital projects in FY 1983, although significant appropriation levels were approved for Energy Conservation/Fuel Conversion and Food for Century III. A discussion of the appropriations approved by the General Assembly and signed by the Governor will appear in the respective sections of the appropriate documents.

Detailed descriptions of each campus' FY 1984 request are presented in the following section. Preceding each campus' project descriptions is a table summarizing the request by budget category.

TABLE 1  
UNIVERSITY OF ILLINOIS  
FY 1984 CAPITAL BUDGET REQUEST PRIORITY LIST

Priority Number	Campus	Project	Budget Category	Project Cost	Cumulative Total	Chicago- University Center	Chicago- Health Sciences Center	Urbana- Champaign
1	UIC-HSC	Roof Replacement-Peoria School of Medicine	REMD	\$ 202,900	\$ 202,900		\$ 202,900	
2	UIC-HSC/UIC-UC	Hazardous Waste Incinerator	BLDG	350,000	552,900		552,900	
3	UIC-UC	Library Improvements	PLAN	327,900	880,800	\$ 327,900		
4	UIC-UC	Relocate Office of Admissions & Records	REMD	1,079,100	1,959,900	1,407,000		
5	UIUC	Library Sixth Stack Addition	EQUIP	30,000	1,989,900			\$ 30,000
6	UIUC	English Building Renovation	REMD	2,630,000	4,619,900			2,660,000
7	UIC-HSC	Pharmacy Building Remodeling	PLAN	375,000	4,994,900		927,900	
8	UIC-HSC	Hospital Addition Remodeling	REMD	1,970,000	6,964,900		2,897,900	
9	UIC-UC	Electrical Upgrade - Roosevelt Road Bldg.	REMD	501,700	7,466,600	1,908,700		
10	UIUC	Auditorium Remodeling	PLAN	150,000	7,616,600			2,810,000
11	UIC-UC	SR <sup>3</sup> - I	REMD	913,600	8,530,200	2,822,300		
12	UIC-HSC	SR <sup>3</sup> - I	REMD	1,857,100	10,387,300		4,755,000	
13	UIUC	SR <sup>3</sup> - I	REMD	2,297,000	12,684,300			5,107,000
14	UIUC	SR <sup>3</sup> - I Equipment	EQUIP	174,000	12,858,300			5,281,000
15	UIUC	Animal Science Lab Chilled Water Line	UTIL	252,000	13,110,300			5,533,000
16	UIUC	Pilot Training Facility	BLDG	1,393,900	14,504,200			6,926,900
17	UIUC	Pilot Training Facility	UTIL	63,000	14,567,200			6,989,900
18	UIC-UC	SR <sup>3</sup> - II	REMD	1,328,300	15,895,500	4,150,600		
19	UIC-HSC	SR <sup>3</sup> - II	REMD	2,134,200	18,029,700		6,889,200	
20	UIUC	SR <sup>3</sup> - II	REMD	2,236,700	20,266,400			9,226,600
21	UIUC	SR <sup>3</sup> - II Equipment	EQUIP	302,000	20,568,400			9,528,600

TABLE 2  
SUMMARY OF THE FY 1984 CAPITAL BUDGET REQUEST  
BY CAMPUS AND CATEGORY

<u>Category</u>		<u>Chicago- University Center</u>	<u>Chicago- Health Sciences Center</u>	<u>Urbana-Champaign</u>	<u>Total</u>	
1.	Buildings, Additions, and/or Structures		\$ 350,000	\$1,393,900	\$ 1,743,900	
2.	Land	--	--	--	-0-	
3.	Equipment	--	--	30,000	30,000	
3a.	SR <sup>3</sup> Equipment	--	--	476,000	476,000	
4.	Utilities	--	--	315,000	315,000	
5.	Remodeling	1,580,800	2,172,900	2,630,000	6,383,700	Ⓢ
5a.	Space Realignment, Renewal and Replacement	2,241,900	3,991,300	4,533,700	10,766,900	
6.	Site Improvements	--	--	--	-0-	
7.	Planning	<u>327,900</u>	<u>375,000</u>	<u>150,000</u>	<u>852,900</u>	
TOTAL		\$4,150,600	\$6,889,200	\$9,528,600	\$20,568,400	

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	Chicago- University Center	Chicago- Health Sciences Center	Urbana-Champaign
1. Estimated Replacement Cost of Facilities, January 1982 (Total Unadjusted Replacement Cost, Table 8.6B, Residential excluded)	\$287,942,598	\$368,263,762	\$ 979,834,624
2. Estimated Replacement Cost of Facilities, January 1984 (Step 1 escalated 9% per year from January 1982 to January 1984)	339,772,266	434,551,239	\$1,156,204,856
3. Gross Area (Total GSF, Table 8.6B, Residential excluded)	3,237,140	3,839,338	10,835,444
4. Average Cost per GSF (Step 2 ÷ Step 3 = \$/GSF)	\$104.96	\$113.18	\$106.71
5. Annual Space Rehabilitation and Remodeling Generation [\$/GSF (Step 4) x .667 (2/3 to be remodeled) x .01 (one time/100 years)]	\$.7001	\$.7549	\$.7118
6. Area of Campus Maintained by Physical Plant with State Funds, Fall 1983 (GSF)	2,943,769	3,951,042	9,213,525
7. Funds Generated by Campus (Step 5 x Step 6)	\$ 2,060,933	\$ 2,982,642	\$ 6,558,187
8. Total Funds Including Architect/Engineer Fees and Contingency (Multiply Step 7 by 1.195)	\$ 2,462,815 (17.8%)	\$ 3,564,257 (25.7%)	\$ 7,837,034 (56.5%)
		\$ 13,864,106 (100.0%)	

TABLE 4  
FY 1984 SR<sup>3</sup> PROJECTS BY CAMPUS

CHICAGO - HEALTH SCIENCES CENTER

SR<sup>3</sup> - I

Exterior Masonry & Tuckpointing	\$ 432,000
Elevator Renovation, CMET	468,200
Air Condition 1919 W. Taylor St. Unit	900,000
Repair & Renovate Fume Hoods, Medicine	56,900
Total	\$1,857,100

SR<sup>3</sup> - II

Remodel Room 200, Pharmacy Building	\$ 438,000
Remodel 2nd Floor H.A., Clinical Laboratories	620,200
Misc. Remod., Floors 2 & 3, 1919 W. Taylor St., CAHP	49,000
Miscellaneous Repairs, SPH East	165,200
Distribution of Elec. Power, Floors 2, 3 & 4, 1919 W. Taylor St., CAHP	246,000
Remodel Rooms 560-566A CMET, Anatomy	223,000
Upgrade Electrical Power, BRL Operating Rooms	94,200
Remodel Rooms 234 & 236 CMWT, Physiology	93,700
Remodel Room 404, Pharmacy Building	204,900
Total	\$2,134,200

UIC-HSC SR<sup>3</sup> TOTAL \$3,991,300

CHICAGO - UNIVERSITY CENTER

SR<sup>3</sup> - I

Roof, Penthouse, Gutter and Drain Repairs - Phase III	\$ 253,500
Handicapped Accessibility - Phase II & Partial Phase III	314,100
Exterior Masonry Repairs - Phase IV - Services Bldg. & Art & Architecture Building	346,000
Total	\$ 913,600

SR<sup>3</sup> - II

Code Corrections - Peoria St. Bldg.	\$ 423,000
Lighting Modification - Lecture Ctr.	261,500
Handicapped Accessibility - Phase III - Provide ANSI Doors	407,800
Fume Hood Corrections - SES Building	236,000
Total	\$1,328,300

UIC-UC SR<sup>3</sup> TOTAL \$2,241,900

URBANA-CHAMPAIGN

SR<sup>3</sup> - I

College of Commerce Remodeling	\$ 148,400
Animal Science Lab - Chilled Water Conversion	77,000
Newmark Laboratory Remodeling	363,000
Roger Adams Laboratory Remodeling	186,800
Accessibility Improvements	176,100
Animal Room Improvements	122,900
Sprinkler Systems	405,300
Elevator Installations	187,700
Classroom Renovation	161,800
Roof Replacements I	468,000
Total	\$2,297,000

SR<sup>3</sup> - II

Astronomy Building Remodeling	\$ 273,400
Loomis Laboratory Remodeling	90,100
Visual Arts Laboratory Remodeling	295,900
Radiology Laboratory -- S.A.C.	172,300
Elevator Replacement	179,000
Gregory Hall Stair Enclosures	428,300
Installation of Safety Showers	71,900
Noyes Laboratory - Fume Hood Improvements	245,200
David Kinley Hall Remodeling -- Room 114	304,100
Cooling Towers Remodeling	176,500
Total	\$2,236,700

SR<sup>3</sup> - I Equipment

College of Commerce Remodeling	\$ 33,000
Newmark Laboratory Remodeling	66,000
Animal Room Improvements	47,000
Classroom Renovation	28,000
Total	\$ 174,000

SR<sup>3</sup> - II Equipment

Astronomy Building Remodeling	\$ 23,000
Visual Arts Laboratory Remodeling	118,000
Radiology Laboratory -- S.A.C.	150,000
David Kinley Hall -- Room 114	11,000
Total	\$ 302,000

UIC SR<sup>3</sup> TOTAL \$5,009,700

TABLE 5  
COST PER SQUARE FOOT OF NEW BUILDING AND MAJOR REMODELING PROJECTS BY CAMPUS

<u>Category/Project (By Campus)</u>	<u>Project Cost</u>	<u>Gross Square Feet</u>	<u>Assignable Square Feet</u>	<u>Efficiency ASF/GSF</u>	<u>\$/GSF</u>	<u>\$/ASF</u>
<u>Chicago - University Center</u>						
Major Remodeling						
Relocate OAR	\$1,079,100	29,604	16,855	.57	\$36.45	\$64.02
<u>Chicago - Health Sciences Center</u>						
Major Remodeling (FY 1984 Request)						
Hospital Addition Remodeling	\$1,970,000		15,037*			\$131.01
<u>Urbana-Champaign Campus</u>						
New Buildings						
Pilot Training Facility	\$1,393,900	10,200	8,500	.83	\$136.66	\$163.99
Major Remodeling (FY 1984 Request)						
English Building Renovation	\$2,630,000		17,990*			\$146.19

\*Figure reflects only the area of building to be remodeled with FY 1984 Request.



TABLE 6  
FUTURE IMPLICATIONS OF PROJECTS IN FY 1984 CAPITAL BUDGET REQUEST

Campus	Project	Budget Category	FY 1984 Request <sup>1</sup>	Additional Costs	
				FY 1985 Costs	Costs FY 1986 and Beyond
UIC-HSC	Roof Replacement-Peoria School of Medicine	REMD	\$ 202,900	--	--
UIC-HSC/UIC-UC	Hazardous Waste Incinerator	BLDG	350,000	--	--
UIC-UC	Library Improvements	PLAN	327,900	\$5,015,900	--
UIC-UC	Relocate Office of Admissions & Records	REMD	1,079,100	--	--
UIUC	Library Sixth Stack Addition	EQUIP	30,000	--	--
UIUC	English Building Renovation	REMD	2,630,000	457,000	\$3,527,000
UIC-HSC	Pharmacy Building Remodeling	PLAN	375,000	4,296,000	--
UIC-HSC	Hospital Addition Remodeling	REMD	1,970,000	2,000,000	6,000,000
UIC-UC	Electrical Upgrade - Roosevelt Road Bldg.	REMD	501,700	--	--
UIUC	Auditorium Remodeling	PLAN	150,000	3,200,000	--
UIC-UC	SR <sup>3</sup> - I	REMD	913,600	--	--
UIC-HSC	SR <sup>3</sup> - I	REMD	1,857,100	--	--
UIUC	SR <sup>3</sup> - I	REMD	2,297,000	--	--
UIUC	SR <sup>3</sup> - I Equipment	EQUIP	174,000	--	--
UIUC	Animal Science Lab Chilled Water Line	UTIL	252,000	--	--
UIUC	Pilot Training Facility	BLDG	1,393,900	133,000	--
UIUC	Pilot Training Facility	UTIL	63,000	--	--
UIC-UC	SR <sup>3</sup> - II	REMD	1,328,300	--	--
UIC-HSC	SR <sup>3</sup> - II	REMD	2,134,200	--	--
UIUC	SR <sup>3</sup> - II	REMD	2,236,700	--	--
UIUC	SR <sup>3</sup> - II Equipment	EQUIP	302,000	--	--
TOTAL			\$20,568,400	\$15,101,900	\$9,527,000

<sup>1</sup>Budget Category for FY 1984 is given.

TABLE 7  
HISTORY OF RECENT CAPITAL BUDGET REQUESTS

	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>	<u>FY 1982</u>	<u>FY 1983</u>
<u>Campus Requests</u>					
Chicago - University Center	\$ 7,788,520	\$ 4,439,095	\$ 6,518,400	\$ 3,469,700	\$ 3,528,200
Chicago - Health Sciences Center	12,409,965	12,889,300	15,017,600	6,022,000	3,801,800
Urbana-Champaign	16,937,056	15,795,600	20,782,400	19,236,400	7,821,100
Total	(\$37,135,541)	(\$33,123,995)	(\$42,318,400)	(\$29,175,600)	(\$15,151,100)
<u>IBHE Recommendations</u>					
Chicago - University Center	\$ 3,311,200	\$ 1,810,400	\$ 3,271,300	\$ 2,505,400	\$ 2,589,100
Chicago - Health Sciences Center	5,111,500	4,489,800	4,103,200	1,781,000	655,800
Urbana-Champaign	13,524,100	9,144,500	11,446,900	12,776,900	5,715,200
Total	(\$21,946,800)	(\$15,444,700)	(\$18,821,400)	(\$17,063,300)	(\$ 8,960,100)
<u>Appropriation<sup>1</sup></u>					
Chicago - University Center	\$ 1,715,000	\$ 1,710,400	\$ -0-	\$ 781,800	-0-
Chicago - Health Sciences Center	2,430,900	1,336,600	225,000	1,291,000	-0-
Urbana-Champaign <sup>2</sup>	4,440,500	2,252,700	919,000	9,718,500	-0-
Total	(\$ 8,586,400)	(\$ 5,299,700)	(\$ 1,144,000)	(\$11,791,300)	-0-
<u>Appropriations for Special Projects</u>					
Food Production Research	28,715,700	4,329,000	4,045,000	1,000,000	\$ 750,000 <sup>3</sup>
Energy Conservation			8,745,800	2,085,700	15,000,000 <sup>4</sup>
Total	(\$28,715,700)	(\$ 4,329,000)	(\$12,790,800)	(\$ 3,085,700)	(\$15,750,000)
<u>Total University of Illinois</u>					
Appropriation	\$37,302,100	\$ 9,628,700	\$13,934,800	\$14,877,000	\$15,750,000

<sup>1</sup>Excludes Food Production Research and Energy Conservation.

<sup>2</sup>The FY 1979 figure includes \$110,000 for a Capital Project appearing in SB 1524.

<sup>3</sup>Based on projects included in SB 1400, as signed by the Governor.

<sup>4</sup>Based on projects included in SB 1446, as signed by the Governor.

TABLE 8  
STATUS OF FY 1982 CAPITAL APPROPRIATIONS (NEW)  
As of August 15, 1982

	Amount Appropriated	U of I Requested	Release of Funds	
			Governor Released	Governor's Freeze
<u>Chicago - University Center</u>				
Remodeling: (\$781,800)				
1) Exterior & interior masonry repairs-Phase III	\$ 253,200	08-24-81		\$ 253,200
2) Electrical upgrade of 12KV underground system	46,900	08-24-81		46,900
3) Lighting modifications	113,000	08-24-81		113,000
4) Stairway & upper walkway repairs	368,700	08-24-81		368,700
Energy Conservation: (\$993,200)				
1) Modifications including replacement of temperature control devices, improvements to the domestic hot water systems, installation of heating system zone controls & heat reclaim systems.	993,200	08-24-81	\$ 993,200/11-20-81	
Subtotal	\$ 1,775,000		\$ 993,200	\$ 781,800
<u>Chicago - Health Sciences Center</u>				
Remodeling: (\$1,291,000)				
1) Improvements to main vertical utility distribution & waste removal systems & upgrading & modifying the heating, ventila- ting & cooling systems in the Hospital Addition.	1,291,000	08-24-81	1,291,000/01-07-82	1,160,000
Energy Conservation: (\$522,000)				
1) Improvements to the tempera- ture control devices in three buildings and the air handling equipment in two buildings (Chicago).	414,000	08-24-81	414,000/12-08-81	
2) Installation of an automated environmental control system (Peoria).	108,000	08-24-81	108,000/11-20-81	
Subtotal	\$ 1,813,000		\$ 1,813,000	\$1,160,000
<u>Urbana-Champaign</u>				
Building: (\$9,577,000)				
1) Library Sixth Stack Addition	9,577,000	08-24-81	9,577,000/12-09-81	
Utilities: (\$141,500)				
1) Library Sixth Stack Addition	141,500	08-24-81	141,500/12-09-81	
Remodeling: (\$266,000)				
1) Conversion from Oil to Gas - Willard Airport	266,000	08-24-81		266,000
Energy Conservation: (\$304,500)				
1) Installation of a heat re- covery system in the Large Animal Clinic & modification of the ventilation systems in Large Animal Clinic and Gregory Hall.	304,500	08-24-81		304,500
Subtotal	\$10,289,000		\$ 9,718,500	\$ 570,500
<u>Food Production &amp; Research</u>				
Equipment: (\$1,000,000)				
1) Veterinary Medicine Basic Sciences Building	1,000,000	11-09-81	1,000,000/2/24/82	
Subtotal	\$ 1,000,000		\$ 1,000,000	
TOTAL	\$14,877,000		\$13,524,700	\$2,512,300

TABLE 9  
STATUS OF BUILDING AND MAJOR REMODELING PROJECTS  
(As of July 29, 1982)

<u>Project</u>	<u>Year Authorized</u>	<u>Estimated Cost</u>	<u>Estimated Completion</u>	<u>Status</u>
Chicago - Health Sciences Center				
Hospital Addition Remodeling	1982	\$ 1,291,000	N/A	Planning/design authorized 2/82
Urbana-Champaign				
Library Sixth Stack	1981	10,558,500	11/83	20% complete
Abbott Power Plant	1981	21,900,000	N/A	Scope & budget to be redefined
Steam Absorption Machine Control	1981	1,150,900	6/83	55% complete
Food for Century III				
Agricultural Engineering Sciences Bldg.	1979	11,252,900	6/83	60% complete
Veterinary Medicine Basic Sciences Bldg.	1979	21,927,800	8/82	98% complete

DETAILS OF THE FY 1984 CAPITAL BUDGET REQUEST

UNIVERSITY OF ILLINOIS - CHICAGO

University Center

The FY 1984 Capital Budget Request consists of five projects with a total cost of \$4,150,600. The first priority for the center is planning for Library Improvements. Planning funds of \$327,900 are requested for FY 1984 with the remodeling to occur in the following year. The purpose of the project is to improve the library collection and support services critical to the center's academic programs.

In order for the remodeling of the Library to begin in FY 1985, it will be necessary to relocate the Office of Admissions and Records out of the Library to Jefferson and Henry Halls. Funds are required to remodel space in Jefferson and Henry Halls prior to the office relocation. The total project cost is \$1,079,100.

Funding is also requested to upgrade the electrical system at the Roosevelt Road Building. The building houses the University's administrative computer system. Work accomplished through this project will prevent a shutdown of the entire system due to an electrical power failure.

Two groups of Space Realignment, Renewal and Replacement projects for a total cost of \$2,241,900 have been included in the request, also. The seven projects from both groups are designed to repair and rehabilitate academic facilities and to increase the accessibility of campus buildings to the handicapped.

TABLE 1  
CHICAGO - UNIVERSITY CENTER  
LIST OF FY 1984 PROJECTS BY CATEGORY

<u>Projects</u>	<u>Estimated Cost</u>
1. Buildings, Additions and/or Structures	\$ 0
2. Land	0
3. Equipment	0
3a. Equipment Related to Space Realignment, Renewal and Replacement	0
4. Utilities	0
5. Remodeling and Rehabilitation	
Relocate Office of Admissions & Records	1,079,100
Electrical Upgrade - Roosevelt Road Building	<u>501,700</u>
Subtotal	(\$1,580,800)
5a. Space Realignment, Renewal and Replacement	
SR <sup>3</sup> - I	913,600
SR <sup>3</sup> - II	<u>1,328,300</u>
Subtotal	(\$2,241,900)
6. Site Improvements	0
7. Planning	
Library Improvements	<u>327,900</u>
Subtotal	(\$327,900)
TOTAL - CHICAGO - UNIVERSITY CENTER	\$4,150,600

## REMODELING AND REHABILITATION

### Relocate Office of Admissions & Records - (\$1,079,100)

The Office of Admissions and Records must vacate space occupied in the Library Building, designed originally as library space, to allow the Library to expand and complete its remodeling program.

The new location for the Office of Admissions and Records will be Jefferson and Henry Halls, 929 and 935 West Harrison Street. Departments presently using the proposed space will be relocated to the facility formerly known as the Formfit Building.

As proposed, the remodeling in Jefferson and Henry Halls includes approximately 16,000 NASF of existing floor space and approximately 1,000 square feet of floor space in the basement. Remodeling will consist of construction of an atrium connecting both halls, as well as a walkway between the third floors of each building. The existing walkway connecting the second floors of the buildings will be covered by the atrium, also. An elevator will be located in the atrium to provide accessibility to handicapped persons and serve the staff of the Office of Admissions and Records.

The Office of Admissions and Records presently occupies 15,275 square feet of space in the Library. The combination of the need to move the Office of Admissions and Records from the Library, the need to keep it centrally located, and the availability of the Jefferson and Henry Halls space make this 16,000 square foot remodeling project an excellent alternative for relocation.

### Electrical Upgrade - Roosevelt Road Building - (\$501,700)

The University of Illinois computer system is centralized in the Roosevelt Road Building. This administrative computer system provides the computer capability for the campuses of the University of Illinois and any power failure for an extended period would seriously disable University operations. While a standby power system would be the ultimate answer, it is believed that a double source of electrical power supply will be



sufficient to ensure suitable continuity of electrical service. At the present time there are two 12,000 volt power distribution lines from two separate high voltage cables coming to the Roosevelt Road Building; however, a bottle neck exists, since there is only one transformer to reduce the voltage to 480 volts. This project will provide a second transformer and complete switch gear that will allow switching from the high voltage cables to the second transformer in the event that the existing transformer fails.

## SPACE REALIGNMENT, RENEWAL AND REPLACEMENT

### Roof, Penthouse, Gutter and Drain Repair - Phase III - (\$253,500)

This project will provide for the repair and/or replacement of leaking roofs covering the Behavioral Sciences Building (including the roofs and sides of the mechanical equipment penthouses), the Science & Engineering Office Building and the Science & Engineering South Building. Gutters, drains, skylights, flashings, railing, walkways and mechanical equipment shelters are all to be inspected and repaired where necessary. "Exotic" designs that are difficult to maintain will be restudied, and conventional, long lasting, low maintenance details will be substituted.

The existing mechanical equipment penthouses on top of the Behavioral Sciences Building are covered with an ethylene propylene polymer membrane roofing (Hypalon) that is weathering poorly. This membrane has required extensive repairs and is responsible for damage to the rooms below. The repairs are considered temporary, and constantly escalating costs forbid the repetition of this extensive maintenance.

The existing built up roofing on all three buildings requires at least a floodcoat restoration of the exposed surface together with flashing and counterflashing repairs. Elastomeric roofing, metal roofing, glazing, vents, parapets and louvers on all of the buildings are to be restored, replaced or redesigned as needed.

### Handicapped Accessibility - Phase II & Partial Phase III - (\$314,100)

The provisions of Section 504 of the Federal Rehabilitation Act of 1973 require that the educational programs of universities receiving Federal support be accessible to the handicapped. This project is the second phase of a multi-phase program to increase the accessibility of all facilities at the Chicago - University Center. Examples of the work to be done include modifying sidewalk grades, construction of ramp entryways to various buildings, and modifying doorways to eliminate accessibility barriers. Work will be conducted at 14 locations at the center.

Exterior Masonry Repairs - Phase IV - Services Bldg. and Art & Architecture Bldg. - (\$346,000)

This project includes the repairs to the walls of the Services Building together with repairs to the Art & Architecture Building. The project will require the grinding out of mortar joints on exterior brick work, removal of weathered caulking, removal of bricks and stone where necessary, replacing flashing, replacing weeps, installing expansion joints where necessary, modifying shelf angles, tuckpointing where indicated, and recaulking and reinstalling the exterior masonry removed during the project.

Code Corrections - Peoria Street Building - (\$423,000)

This project calls for the replacement of the wood stair in the southwest corner of the south building with a stair of non-combustible construction. The stairs are a necessary second exit from this building and must be replaced in its entirety (basement to sixth floor). In its present deteriorated condition the stairs are a safety hazard and must be replaced to comply with code.

In addition to the above, the following conditions in both the north and the south buildings must be revised to comply with code:

- Extend landings & enclosure of south central stairs at eight landings.

- Install new firedoors, frames and related hardware.

- Provide two door enclosures at north central stairs, six landings.

- Provide four door building separation vestibules between north and south buildings -- five floors.

- Revise exits from building as required.

- Provide fresh air intakes to air handling units from roof.

Lighting Modification - Lecture Center - (\$261,500)

This project will provide the Lecture Center with improved interior lighting levels. The exterior fluorescent lighting underneath the elevated walkway system and adjacent to the Lecture Center complex will also be replaced.

In the Lecture Center, the interior fluorescent lighting will be supplemented by the installation of additional fixtures, and the replacement of the existing plastic diffusers with acrylic prismatic lenses. This will provide higher, more acceptable lighting levels in the Lecture Halls.

Outside of the Lecture Center Halls, underneath the elevated walkway, there are approximately 124 exterior fluorescent lighting fixtures that are badly in need of replacement. The removal and replacement of these fixtures with fluorescent lighting along the Lecture Hall perimeters will provide adequate lighting levels for the security and safety in this area and a maintainable lighting system.

The third phase of the exterior lighting program provided high pressure sodium lighting for all of the exterior campus areas; however, two areas remain dark when compared to the rest of the general exterior campus lighting, and we wish to correct this deficiency by adding a forty foot fixture near the SEL Building and two 25 foot fixtures near the SES Building.

Handicapped Accessibility - Phase III - Provide ANSI Doors - (\$407,800)

The entrance doors to most of the existing campus buildings were constructed with a 2 ft. 6 in. module. These doors are grouped in pairs, and there is an inner and outer pair in each vestibule to each building. The existing doors have been provided with a mullion between the doors so that the buildings may be electronically secured. This security is necessary and vital to the campus operation. However, the installation of these mullions has created entrances that are not acceptable to the provisions of Article 504 of the Federal Rehabilitation Act of 1973. It is necessary to retrofit all of the entrances in order to comply with this law and with the newly developed ANSI standards.

This project provides two pair of accessible doors at the main entrances of all of the older Center buildings. One pair of doors replaces the outer pair and one pair replaces the inner pair at the typical main, vestibule entrance to each building. The new doors will be constructed in three of the standard 2 ft. 6 in. modules of the existing glass curtain wall.

Fume Hood Corrections - SES Building - (\$236,000)

This project concerns the corrections of exhaust air inadequacies for fume hoods in the Science and Engineering South Building. The exhaust air provided for many of the fume hoods located in the Science and Engineering South Building is below the recommended safety standard of the University's Office of Environmental Health and Safety. This standard is that the face velocity of air at the fume hood opening shall be one hundred (100) feet per minute with the fume hood sash fully open.

To correct the exhaust air inadequacies for the fume hoods the following is required:

1. Replace 66 motors and respective V-Belt drives and make the necessary electrical modifications.
2. Replace three complete exhaust fans with new fans including necessary sheet metal and electrical modifications.

## PLANNING

### Library Improvements - (\$327,900)

This project will provide the architectural and engineering design specifications for renovating the Library. The program for remodeling the Library can, for the purpose of explanation, be separated into three parts:

1. Found space, i.e., the recovery of space by a) filling in the remaining wells on the fourth floor; b) enclosing the balconies on the second, third and fourth floors; c) designing Library space in the north and south ends of the basement in space originally designed for mechanical equipment; d) remodeling space presently occupied by the Office of Admissions and Records but designed originally as Library space.

2. First floor remodeling.

3. Second floor remodeling.

With the completion of this remodeling program, the campus will have recovered all available space in the UIC-UC Library building.

Found Space -- Space found by enclosing the balconies on the second, third and fourth floors will represent a gain of approximately 3,300 square feet per floor, or a total gain of 10,000 square feet. The space found by filling in the wells on the fourth floor will represent a gain of 2,400 square feet. Space on this floor will be used for patron seating and increasing the stack efficiency by freeing an equivalent amount of space elsewhere in the building for additional bookstacks.

The areas to be remodeled in the basement will be used for the storage of manuscript and archival materials now stored in various locations inside and outside the Library. If space permits, the Staff Lounge will be relocated on the first floor and the basement space previously used as a lounge will be converted to materials storage. Compact shelving installations will be planned for these areas. Existing shelves will be used for expansion on other floors of the building.

Approximately 13,000 square feet will be recovered from OAR space on the first floor. The use of the space is described in the first floor remodeling.

The total found and remodeled space is about 31,850 NASF.

First Floor-Remodeling -- The first floor will become the location for the most heavily used and basic public services -- reserve books, current journals and newspapers, the circulation desk, and seats for studying one's own material between classes as well as for using library books and other media. Commuting students and faculty will be able to rapidly locate and use these vital services. These areas also will be designed to remain open while the rest of the building is closed. In other peripheral, but strategically located spaces, the appropriate technical service units will be grouped around the loading dock. The administrative offices and the personnel office will be located at the Morgan Street door.

Second Floor-Remodeling -- The second floor of the Library is as important as the heavily used first floor. The second floor entrance will be closed and the front stairs leading to the first floor removed. Round tables and informal seating will be provided so as to create an attractive area for users.

The original reference counter will be removed, thereby allowing the reorganization of the reference and bibliographic collections on second floor north with accessibility for the reference librarians on duty at the information desks, the bibliographers in the Collections Development offices, and the staff members of the Cataloging Department. Offices for the reference librarians will also be provided in three locations surrounding the card catalog, the reference and bibliographic collections, and the information desks.

UNIVERSITY OF ILLINOIS - CHICAGO

Health Sciences Center

Two emergency projects rank as the top two priority projects for both the Center and the University. The first project calls for the replacement of the roofing surface over a major section of the Peoria School of Medicine. The roofing surface failure appears to be due to excessive roofing insulation shrinkage. The second project is the installation of a hazardous waste incinerator at the Health Sciences Center Steam Plant yard. The incinerator is capable of disposing of hazardous waste currently stored at the Chicago campus, as well as handling disposal needs anticipated in the future.

To confront the enormous task of renovating older buildings, an inventory of required improvements has been developed over several years. Many of the renovations are significant cost items, or provide services throughout a building, and are, therefore, incorporated in major remodeling requests. The third and fourth Center priorities for FY 1984 are such projects. Planning funds are requested in FY 1984 to improve the air conditioning and ventilation system of the Pharmacy Building. Construction is scheduled for FY 1985. Renovation of space in the Hospital Addition that has been vacated due to occupancy of the Replacement Hospital is the second major remodeling project.

Other improvements comparatively minor in scope are requested as Space Realignment, Renewal and Replacement (SR<sup>3</sup>) projects. A total of \$3,991,300 is requested in FY 1984 for these minor remodeling projects.



TABLE 1  
CHICAGO - HEALTH SCIENCES CENTER  
LIST OF FY 1984 PROJECTS BY CATEGORY

<u>Projects</u>	<u>Estimated Cost</u>
1. Buildings, Additions and/or Structures	
Hazardous Waste Incinerator	<u>\$ 350,000</u>
Subtotal	(\$ 350,000)
2. Land	0
3. Equipment	0
3a. Equipment Related to Space Realignment, Renewal and Replacement	0
4. Utilities	0
5. Remodeling and Rehabilitation	
Roof Replacement - Peoria School of Medicine	202,900
Hospital Addition Remodeling	<u>1,970,000</u>
Subtotal	(\$2,172,900)
5a. Space Realignment, Renewal and Replacement	
SR <sup>3</sup> - I	1,857,100
SR <sup>3</sup> - II	<u>2,134,200</u>
Subtotal	(\$3,991,300)
6. Site Improvements	0
7. Planning	
Pharmacy Building Remodeling	<u>375,000</u>
Subtotal	(\$ 375,000)
TOTAL - CHICAGO - HEALTH SCIENCES CENTER	\$6,889,200

## BUILDINGS, ADDITIONS, AND/OR STRUCTURES

### Hazardous Waste Incinerator - (\$350,000)

Approximately 170 investigators and 325 laboratories are authorized to use radioisotopes in research and medical care programs at the Chicago campus of the University. Many more use or produce chemical compounds which may be toxic, ignitable, reactive, corrosive, or otherwise hazardous. The use of such material is indispensable in research and medical care. A by-product of these activities is an accumulation of waste materials requiring special handling and disposal. Although some of these waste materials are disposed to the sewer, incinerated or sterilized, much of the material cannot be disposed at this time and is being stored in specially designated storage areas or in laboratories awaiting disposal by some method.

In June 1980 the Vice Chancellor for Academic Affairs at the Health Sciences Center appointed a study committee to investigate the appropriate disposal of the following categories of waste:

- radioactive
- chemical
- infectious
- animal
- ordinary

Following consideration of the concerns regarding hazardous waste disposal, the study committee recommended implementation of a plan to purchase and install an incinerator for the purpose of disposing low-level radioactive waste and incinerable chemical waste generated at the Chicago campus. Implementation of this plan is considered by the committee to be the best course of action for the immediate and long-term needs of the University of Illinois at Chicago.

The site selected for installation and operation of the proposed incinerator is located in the Chicago - Health Sciences Center steam plant yard. The incinerator proposed for purchase and installation is a controlled air, dual chamber, refractory-lined unit with a capacity of about 500 pounds per hour. The project budget is estimated at \$350,000 comprised of \$200,000 for the incinerator purchase and \$150,000 for site development, utilities, installation, fees and contingencies.

The recommended proposal provides for incineration of radioactive and chemical waste only, as the most cost-effective scheme. The analysis shows an annual cost savings of \$50,700 when compared to fiscal year 1980 costs of alternative methods of disposal. The cost to transport and bury the accumulated hazardous waste now on hand is in excess of \$100,000, if this disposal option were permitted. This cost can be avoided. Additional savings could be realized by contracting for incineration of low-level radioactive waste generated by neighbor institutions.

The environmental impact created by incineration of low-level radioactive waste and incinerable chemical waste is deemed to be negligible. Radioactivity discharged to the atmosphere will be far below the limits permitted by license and will amount to an estimated increase of 0.042 mrem per year which is approximately 4/1000 of the average background radiation level in this area.

## REMODELING AND REHABILITATION

### Roof Replacement - Peoria School of Medicine - (\$202,900)

While replacing the roof of the laboratory wing of the Peoria School of Medicine, several test cuts were made in the roof of the lower classroom wing roof in order to evaluate that roofing surface and its various component parts. The tests revealed abnormally open joints between the blocks of polystyrene roof insulation and what appears to be related roofing membrane splits or failures. These conditions, suggestive of shrinkage of the polystyrene insulation, are allowing water to penetrate the roofing surface in several locations. All test locations provided obvious evidence of moisture in quantity and in one instance approximately 3/8" of water was standing on the deck in the test cut area. The roofing surface is expected to rapidly continue to deteriorate.

Costly damage to building interiors and contents will result if the roofing surface experiences major failure. For example, the school's medical library is housed beneath the failing roof surface.

Based on the results of the test cuts and familiarity with past roofing problems at the facility, the project architect and the Capital Development Board have recommended that the roofing material and insulation on the lower roof be removed and replaced. The estimated cost of the project is \$202,900.

### Hospital Addition Remodeling - (\$1,970,000)

With the occupancy of the Replacement Hospital, approximately 85,000 net assignable square feet of space has been vacated in the Hospital Addition. About 40,000 square feet of this space has been reassigned to the Hospital for such uses as clinical laboratories, medical records library, and patient account file storage. The remainder of the space has been assigned to the Abraham Lincoln School of Medicine for use by the clinical departments primarily as faculty offices and laboratories.

The scope of remodeling requested in FY 1984 consists of remodeling the 6th and 7th floors for the departments of Surgery and Medicine respectively. The remodeling will provide office, laboratory and meeting facilities. In addition, the building utility and laboratory services, installed with FY 1982 funds, will be extended to the remodeled areas. The remodeling of these two floors is the first phase of space remodeling which will eventually provide for consolidation of three major clinical departments of the college:

- Medicine
- Surgery
- Pediatrics

A total of ten floors will ultimately be involved in the remodeling and consolidation plan.

## SPACE REALIGNMENT, RENEWAL AND REPLACEMENT

### Exterior Masonry & Tuckpointing - (\$432,000)

There are eight Center buildings involved in this program. Due to the deterioration of mortar joints, window caulking and rusting of steel lintels, this work is an absolute necessity to preserve the integrity of the exterior masonry and stop further deterioration of interior plaster walls.

The following is a list of the buildings involved and a brief description of the work that will be performed on each:

- College of Medicine West Tower (908 Building) - General tuckpointing-north elevation only.
- College of Medicine West Tower (909 Building) - Wolcott Street Wing - General tuckpointing, east and west elevations. Polk Street Wing - General tuckpointing from the fifth floor level down to grade, north elevation only. South elevation work was completed under another phase.
- College of Medicine East Tower - General tuckpointing-north and east walls. The south and west elevations, in the inner court, were completed under a previous phase.
- College of Pharmacy - General tuckpointing, all elevations.
- 1919 West Taylor Street - Re-caulking of the wall coping joints and tuckpointing of the roof penthouses.
- Hospital Addition - Tower Section 3rd through 15th floors replacement of approximately 60 lintels and general tuckpointing and window frame caulking, all four elevations. The low-rise portion of this building (1st and 2nd floors) was completed under a previous phase.
- Biologic Resources Laboratory - West Wing (one story portion) general tuckpointing all elevations. East wing (two story portion) - re-caulking of the brick panels laid into the exposed structural steel framing.
- Medical Sciences Addition - General tuckpointing and re-caulking of all window frames, all elevations.

Maintaining these buildings in good repair will provide a secure environment, free of water seepage, and will prevent further deterioration of walls and ceilings. The buildings provided for in this project are to be retained for use for the foreseeable future. Attention to the integrity of the basic building structures is appropriate.

Elevator Renovation, CMET - (\$468,200)

Major rehabilitation of the College of Medicine East Tower (formerly the SUDMP Building) has been in process for several years following relocation of the College of Dentistry. Renovation of the existing three manually operated elevators are part of that major rehabilitation. Space remodeling has provided for new building occupants, but existing elevator services limit the usefulness of the newly remodeled areas.

This project will renovate the two passenger elevators serving the basement through 14 floors of this building. The renovation will meet demands of the occupants; code requirements of the City Fire Department for highrise buildings; and will provide for the handicapped. Renovation of a service elevator is deferred.

The scope of the project consists of replacing the existing manually operated elevator equipment with new selective collective automatic elevator controls and the required modifications to the elevator cabs and doors to accommodate the new automatic operations.

Air Condition 1919 W. Taylor Street Unit - (\$900,000)

The 1919 West Taylor Street Building, formerly the Public Health Hospital and Clinics, was transferred to the University in June 1975. This "H" shaped, eight story building, constructed in the early 1950's, has approximately 183,000 GSF and 109,000 NASF. The building is presently ventilated by 100% outside air supplied through the corridors. There are no ventilation units or ducts serving the individual rooms. The building has no central air conditioning system.

This program provides the necessary components for the purchase and installation of a central air conditioning system in the 1919 West Taylor Street Unit and will provide chilled water to floors 1, 2, 3, and 4. No lateral distribution is provided however. The components included are:

- 300 ton chiller
- Cooling tower
- Condensate pumps & piping
- Chilled water pumps
- Chilled water risers
- Chilled water valves
- Electrical connections
- Controls

Future phases will complete the system providing lateral distribution for the floors.

Repair and Renovate Fume Hoods, Medicine - (\$56,900)

There are 136 fume hoods of several types in four separate buildings housing the College of Medicine. Eighty-six hoods are functioning adequately; 15 hoods recently were repaired and are also functional; at least 35 others require some repair and upgrading. These hoods are located in space utilized by Basic Medical Sciences departments for major research activities. Functioning fume hoods are imperative in research laboratories to preserve the health and safety of the personnel. Work required to renovate fume hoods includes repairing motors, blowers, sash, switches, and ductwork.

Remodel Room 200, Pharmacy Building - (\$438,000)

Room 200 is a large laboratory, located in the north bay on the second floor of the Pharmacy Building. It consists of 6,600 NASF. The remodeling project will create model working pharmacies which will duplicate conditions in the working world for undergraduate students. The program dictates a complete removal of existing equipment and a complete remodeling of the area.

The original design of the Pharmacy Building provided for students taught in large groups in large laboratories, with emphasis upon training dispensing pharmacists. In recent years, however, emphasis has been placed on smaller teaching groups and training clinical pharmacists, rendering old laboratories such as Room 200 inefficient. The remodeling completely changes the character of this laboratory and provides a modern up-to-date teaching lab.



Remodel 2nd Floor H. A., Clinical Laboratories - (\$620,200)

This work involves the relocation and expansion of several clinical laboratory activities from the second floor of the College of Medicine East Tower to the second floor of the Hospital Addition. The present clinical laboratory has a critical need for additional space. The area available is approximately 16,000 GSF and will supplement the present laboratory space to permit consolidation as well as expansion of clinical laboratory services.

The Hospital Addition area is only partially air conditioned, but is adequately equipped with all other utilities and services to serve a clinical laboratory function. In an effort to hold down expenditures, the existing plan configuration and features will be retained as much as possible, however, some large areas will be modified into smaller units. Consolidation of activities and services and expansion of some services will be beneficial to the improvement of laboratory services and will resolve a portion of their severe space deficiency. Only clinical areas and administrative areas will require air conditioning. All areas will meet code requirements.

Miscellaneous Remodeling, Floors 2 & 3, 1919 W. Taylor Street, CAHP - (\$49,000)

The Biocommunications Arts and Occupational Therapy programs of the College of Associated Health Professions occupied the 2nd and 3rd floors of the 1919 W. Taylor Street Unit several years ago with the expectations of some space remodeling to accommodate program activities. In addition, these improvements are required to accommodate the consolidation of programs in Chicago resulting from the contraction of regional programs caused by budget reductions. However, to this date no funds have been made available for college remodeling activities.

The scope of work includes general remodeling and electrical improvements in eleven rooms.

Miscellaneous Repairs, SPH East - (\$165,200)

This project will consist of general renovation of the building which presently houses administrative and faculty offices and classroom facilities of the School of Public Health. Generally, renovation work in the

building has been "stopgapped" since it was occupied by the University in 1973. Major renovation work now is in order to insure the future utility of the building. Specifically, the following work must be done:

1. Major Roof Repairs - The removal of the existing system and the installation of a new roof sheet, insulation and ballast.
2. Total Window Replacement - With modern air tight units, glazed with double pane glass.
3. Structural Repairs - The existing failure at the northeast quadrant will be repaired.
4. Install three electric water coolers.
5. Convert the existing second floor bathroom to a toilet room.

Distribution of Electrical Power, Floors 2, 3 & 4, 1919 W. Taylor St., CAHP - (\$246,000)

Upgrading and modernization of electrical services in the 1919 W. Taylor Street Unit began with the allocation of funds in fiscal years 1979 and 1980. Completion of this funded work will provide adequate electrical service to the building for future needs and will distribute power vertically to the first four floors.

This project provides for the lateral distribution of electrical power on floors 2, 3 and 4 to accommodate the needs of the Biocommunications Arts, Occupational Therapy, Physical Therapy, and graduate programs of the College of Associated Health Professions. Absence of sufficient electrical service prevents these programs from implementing fundamental instructional, research and administrative activities.

Remodel Rooms 560-566A CMET, Anatomy - (\$223,000)

This area was formerly occupied by the College of Dentistry and was not renovated or refurbished for some time prior to or following occupancy by the Department of Anatomy in 1978. The space is inadequately arranged, exterior walls leak, plaster and paint are peeling, windows do not close properly, walls and floors need repair, necessary utilities and lab

furniture are lacking. Room 565 (and 565A) is presently in such deteriorated condition that it cannot be occupied and is used for departmental storage. Room 560 is used as an improvised tissue culture room; the sink in this room is malfunctional and needs to be replaced. Room 566 is in minimally usable operation as a wet laboratory; 566A is a storage room. Room 561 is in considerable disrepair and is assigned to graduate students for office space.

The following changes are proposed:

1. Repair and replastering of all exterior walls where necessary.
2. Install metal stud and gypsum board partitions in certain rooms to maximize laboratory space.
3. Furnish and install new laboratory furniture in Rooms 560, 561, 565, 565A, 566 and 566A.
4. Furnish and install gas, air vacuum and water service.
5. Provide branch circuiting and electrical outlets.
6. Patch areas disturbed by new construction.
7. Paint all rooms in their entirety.
8. Hook up central air conditioning to all rooms.

#### Upgrade Electrical Power, BRL Operating Rooms - (\$94,200)

The upgrading of the electrical services in operating rooms of the Biological Resources Laboratory Building involves several of the ten original surgical suites and the support areas. This area (3500 sq. ft.) is currently being used for limited experimental surgery, animal manipulation and physiological monitoring under the supervision of the Laboratory management but assigned to other departments at the center. The efficient use of this area will be significantly increased when the electrical deficiencies are corrected.

The present electrical system in this area does not meet building codes for receptacles; has substandard wiring; and has cross-connected circuits between rooms. These deficiencies prevent the use of many monitoring systems and create tremendous problems in terms of overloading the circuits. This area represents a potentially significant hazard to those

working in the rooms. With the increasing use of sophisticated electrical equipment for experimental monitoring, this area cannot effectively meet the needs of the funded research projects requiring this type of support.

Remodel Rooms 234 & 236 CMWT, Physiology - (\$93,700)

Rooms 234 and 236 are located in the Department of Physiology and Biophysics in the College of Medicine West Tower building. Room 234, an area of approximately 176 square feet, is currently used as a faculty office. Remodeling plans include installation of air conditioning, new vinyl floor and suspended ceiling. Painting the walls will complete remodeling of this room. It will continue to be used as an office after remodeling. Room 236, adjacent to room 234, is a research laboratory of approximately 272 square feet. Remodeling will consist of installation of air conditioning, vinyl floor and suspended ceiling. A conventional four foot fume hood is to be purchased and installed with the necessary duct work. New metal laboratory furniture with formica counter tops will be purchased and installed, replacing existing wooden laboratory benches. Utilities (air, gas, vacuum) will be relocated. The hood is to have the usual laboratory services, air, gas, vacuum, steam and cold water. A new sink with metal base cabinet to match other furniture will replace the larger existing sink.

Remodel Room 404, Pharmacy Building - (\$204,900)

Room 404 is an instructional laboratory consisting of about 3,300 NASF and comprising approximately one-half of the north bay of the fourth floor of the Pharmacy Building. The east section of this room will be partitioned to provide two faculty office-laboratory suites, with the balance of the room retained as instructional laboratory. Existing lighting, ceiling, electrical services, laboratory benches and utility services and flooring will require alteration or replacement to accommodate the new arrangement.

The original design of the Pharmacy Building provided for students taught in large groups in large laboratories, however, in recent years emphasis has been placed on smaller teaching groups and training clinical pharmacists. Curricular revisions have rendered large laboratories such as Room 404 inefficient. These curricular revisions have also necessitated that a new Department of Pharmacy Practice be formed. This department is now one of the College's largest departments. This situation has necessitated that space of the more traditional departments be shared with them. The project would reduce the current overcrowding of graduate students and provide needed office and research space.

## PLANNING

### Pharmacy Building Remodeling - (\$375,000)

This project involves the upgrading of the air conditioning and ventilation system by the installation of additional ventilating systems, including air handling systems, air distribution systems, chilled water piping and pumps, automatic temperature controls and related electrical services. Additional chilled water capacity to support the new ventilating system is to be obtained from a chilled water generating plant external to the College of Pharmacy Building.

The problem, inadequate ventilation and the lack of air conditioning, dates back to the original construction of the facility. The building design and appropriation request were based on the development of an enclosed "T" shaped building, with the air conditioning capacity to be located in the back of the building. However, the appropriation was sufficient only to construct the front part of the building, thus creating a building with fixed windows and no air conditioning. When the three small additions were constructed, they were air conditioned. Unfortunately, these areas encompass only a small part of the facility and include very few instructional or faculty areas. To further exacerbate the problem, the existing ventilation system is inadequate. Those two factors unite to create an unhealthy, unsafe and counterproductive environment.

The American Council on Pharmaceutical Education, in its 1974 accreditation report, cited the problem in its evaluation of the College's physical facilities. "Unfortunately, the building is inadequately ventilated and sealed without provision for air conditioning which leads to discomfort and inefficiency."

The combination of lack of air conditioning and inadequate ventilation manifests itself in several ways: extreme heat (temperatures often reach 90° and higher) in both the winter and summer; extreme fluctuation in temperature; the introduction of noxious and toxic fumes exhausted from several laboratories into other areas; and the introduction of large

amounts of black soot into areas. The extreme heat and toxic fumes create hazards to both students and staff. Due to these aggregate problems, much time, money, and patience have been exhausted in trying to correct or at least make the situation tolerable.

For FY 1984 funds are requested for planning. Construction will begin in FY 1985. Construction funds required for the project are \$4,296,000. Total project cost based on FY 1984 dollars is \$4,671,000.

UNIVERSITY OF ILLINOIS

Urbana-Champaign

The FY 1984 Capital Budget Request contains ten projects at Urbana-Champaign for a total cost of \$9,528,600. The first priority project for the campus is an equipment request for the Library Sixth Stack Addition. The movable equipment will include book trucks, a book drop, and equipment to finish the reading carrels.

Renovation of the English Building is the second priority project for the campus. This third phase of a four phase project is budgeted at \$2,630,000. Renovation of the west center portion of the building into classrooms and offices better suited to programs housed in the building will be accomplished in this phase. It is estimated that the total remodeling costs for the project will be 40-50% less than the construction of a new facility.

Several replacement projects are included in the campus' FY 1984 request. Remodeling planning funds are requested to design a new roof system and related mechanical and electrical changes made necessary by the deteriorating conditions of the Auditorium's metal roof dome. A chilled water line will be extended from the Library Air Conditioning Center to the Animal Science Laboratory to replace air conditioning at that facility which is about to fail. Construction of a Pilot Training Facility is proposed to replace the current building which is costly, unsafe, and not conducive to learning.

The FY 1984 request also includes two Space Realignment, Renewal and Replacement groups containing twenty separate projects at a total cost of \$5,009,700. These projects and related equipment requests are intended to upgrade portions of existing space and improve the utilization and condition of the facilities.



TABLE 1  
URBANA-CHAMPAIGN  
LIST OF FY 1984 PROJECTS BY CATEGORY

<u>Projects</u>	<u>Estimated Cost</u>
1. Buildings, Additions and/or Structures	
Pilot Training Facility	<u>\$1,393,900</u>
Subtotal	(\$1,393,900)
2. Land	0
3. Equipment	
Library Sixth Stack Addition	<u>30,000</u>
Subtotal	(\$30,000)
3a. Equipment Related to Space Realignment, Renewal and Replacement	
SR <sup>3</sup> - I Equipment	174,000
SR <sup>3</sup> - II Equipment	<u>302,000</u>
Subtotal	(\$476,000)
4. Utilities	0
Animal Science Lab Chilled Water Line	252,000
Pilot Training Facility	<u>63,000</u>
Subtotal	(\$315,000)
5. Remodeling and Rehabilitation	
English Building Renovation	<u>2,630,000</u>
Subtotal	(\$2,630,000)
5a. Space Realignment, Renewal and Replacement	
SR <sup>3</sup> - I	2,297,000
SR <sup>3</sup> - II	<u>2,236,700</u>
Subtotal	(\$4,533,700)
6. Site	0
7. Planning	
Auditorium Remodeling	<u>150,000</u>
Subtotal	(\$150,000)
TOTAL - URBANA-CHAMPAIGN	\$9,528,600

BUILDINGS, ADDITIONS AND/OR STRUCTURES

Pilot Training Facility - (\$1,393,900)

Estimated Total Project Cost . . . . .	\$ 1,589,900
Estimated Bond-Eligible Funds	
Required in FY 1984 . . . . .	\$ 1,456,900
Total Non-State Funding for Which the	
Project is Eligible . . . . .	-0-
Estimated Non-State Funding . . . . .	-0-
Gross Square Feet . . . . .	10,200
Net Assignable Square Feet . . . . .	8,500
Building Efficiency . . . . .	83%

This project has been given a high priority by the campus administration because of the badly deteriorated condition of the present facility. The building area now occupied by Pilot Training for its academic program in Aviation was constructed in 1945. This structure is a lean-to building attached to Hangar #1. The hangar was originally erected in Grady, Arkansas, during World War II. It was dismantled and shipped to the University of Illinois-Willard Airport and re-erected. While the building has been upgraded (on a temporary basis) and remodeled to furnish minimum facilities, it is rapidly deteriorating and requires replacement. The walls are poorly insulated, the heating is poor, the air conditioning is minimal, and, until recently when an emergency temporary coating was applied, the roof leaked.

Deterioration due to aging and weather damage has occurred to the point where current educational functions were seriously jeopardized. Instructor personnel were not being protected from leaking structures, and expensive electronic flight simulators (\$300,000) were being damaged from moisture and furnace residues. Instructors' and students' lives were endangered by the potential for severe electrical shock which could occur from the operation of electrical equipment in an area where water collects on the floor. The resurfacing of the roof has corrected the situation for now, but the leakage problems are expected to recur in two or three years

from now when the protective covering deteriorates. The present space is also extremely energy wasteful and must be corrected to conserve energy and utilities funds.

In order to clear the site for this project, the existing Pilot Training Facility, containing 3,760 GSF, must be razed. The structure planned to replace the current facility will be of low-cost construction (concrete block or pre-engineered metal structure with concrete foundation and concrete floor) and will provide the following types and amounts of space:

Room Type and USOE Code		NASF in Proposed Building	
Instructional Lab (210, 215, 220, 230)		4,175	
Office (310, 315)		4,085	
Locker Rooms (690)		240	
TOTAL		8,500	
	Estimated Total Project Cost	Requested for FY 1984	Requested for FY 1985 and Beyond
Basic Building Cost (Including Fixed Equipment and Pro- fessional Fees)	\$1,393,900	\$1,393,900	\$ -0-
Equipment	133,000	-0-	133,000
Utilities	63,000	63,000	-0-
Planning (Included in Basic Building Cost Above)	(89,000)	(89,000)	(-0-)
TOTAL	\$1,589,900	\$1,456,900	\$ 133,000

## EQUIPMENT

### Library Sixth Stack Addition - (\$30,000)

This project provides for the purchase of equipment to support the operation of the Library Sixth Stack Addition. The major portion of the equipment will include book trucks, a book drop, and equipment to finish the reading carrels. The movable equipment included in this project will allow the Sixth Stack Addition to be used effectively upon completion.

### College of Commerce Remodeling - (\$33,000)

This request relates to and supports the SR<sup>3</sup> item for College of Commerce Remodeling in David Kinley Hall and Commerce West. The major portion of the equipment to be purchased will be office equipment such as desks, chairs, file cabinets and bookcases. This movable equipment will allow teaching staffs to use the remodeled space in an effective manner.

### Newmark Laboratory Remodeling - (\$66,000)

The major portion of this request involves the purchase of equipment for the Newmark Laboratory to be used to analyze various highway related materials. This equipment will help the Department of Civil Engineering consolidate its activities into Newmark Laboratory.

### Animal Room Improvements - (\$47,000)

This request is made in support of the Animal Room Improvements project in the Electrical Engineering Annex. The major portion of the equipment to be purchased will be stainless steel cat and rodent cages. There will be some general support equipment purchased such as a wet-dry vacuum and storage cabinets. The caging equipment in particular is needed to meet Federal guidelines for the housing of laboratory animals.

Classroom Renovation - (\$28,000)

The classroom renovation-equipment project is a companion request to the SR<sup>3</sup> project involving upgrading and modification of nine classrooms over 50 years old. Approximately 300 new movable arm chairs will be purchased to replace old fixed arm chairs. The chairs would be located in Engineering Hall. Installation of the equipment is in keeping with the campus' goal of modernizing outdated facilities to better accommodate progressive instructional methods.

Astronomy Building Remodeling - (\$23,000)

This request relates to and supports the SR<sup>3</sup> item for Astronomy Building-Remodeling. The major part of the equipment will be telescopes which will be used in Astronomy's instructional program for night sky observation sessions. Office furniture and research equipment items make up the balance of the equipment needs.

Visual Arts Laboratory Remodeling - (\$118,000)

This request supports the SR<sup>3</sup> item for the Visual Arts Laboratory project in the Fine Arts Building. The major part of the equipment will be cinematography cameras and related equipment. The equipment used in this type of instruction is a very important part of the curriculum since the students are evaluated on their use of the equipment.

Radiology Laboratory--S.A.C. - (\$150,000)

This request relates to and supports the SR<sup>3</sup> project for the Radiology Laboratory in the Small Animal Clinic. The major portion of the equipment to be purchased will be X-ray and fluoroscopic equipment. This movable equipment will allow the radiology section to perform their work more efficiently.

David Kinley Hall Remodeling--Room 114 - (\$11,000)

This request relates to the SR<sup>3</sup> item for the David Kinley Hall Remodeling-Room 114 project. This basic remodeling of this major lecture room is being done to make it possible to use audio-visual methods for instruction. The necessary equipment to be purchased consists of a motion picture projector, slide projectors, and overhead projectors, a lectern and stand, and a screen.

## UTILITIES

### Animal Science Lab Chilled Water Line - (\$252,000)

The existing reciprocating freon compressors and condensers which provide chilled water to air condition the Animal Science Laboratory have reached the end of their productive lives. Continued repairs will prove ineffective in restoring the usefulness of the system. An analysis of various air conditioning options shows that the most efficient system in both short and long term is to extend the eight inch chilled water line supplied by the Library Air Conditioning Center from Nevada Street to the Animal Sciences Laboratory. In addition to supplying cooling capacity to the Animal Sciences Laboratory, the new water line will have enough capacity to allow Bevier Hall to be air conditioned from that source at some time in the future. The project will require approximately 1,000 lineal feet of ductile iron chilled water supply and return. There is an SR<sup>3</sup> request associated with this project that will provide the necessary modifications inside the Library Air Conditioning Center building to direct chilled water to the Animal Sciences Laboratory.

### Pilot Training Facility - (\$63,000)

This project is in support of construction of a building to replace a dilapidated structure housing the pilot training program. The Pilot Training Facility will require the normal array of utilities used in most academic buildings: heat, air conditioning, electricity, water, storm sewer, and sanitary sewer. While some connections are located on or near the facility site, some utility connections must be extended to the site. For example, electric service must be extended from Hangar One to the project site. The majority of the utility project costs will be incurred for electric service and storm and sanitary sewer connections. The facility will have its own heating and air conditioning plant because Willard Airport has no central plant.

## REMODELING AND REHABILITATION

### English Building Renovation - (\$2,630,000)

This request represents the third phase of a multi-phased project to completely renovate the English Building. The total renovation program is estimated to cost approximately \$8,500,000 and extend one more phase in addition to this phase. After the total remodeling project is completed, the English Building will be for all practical purposes new inside the exterior walls. The remodeling is estimated to cost 40-50% less than construction of a new facility of the same size. The total remodeling program involves a new heating and air conditioning system for the building, construction of a new fire rated stair, enclosing two existing stairs, installation of an elevator, additional rest rooms and new plumbing installations, new structural flooring in the west half of the building as well as the typical partitioning, lighting and ceiling improvements, thus illustrating the broad scope of the remodeling project.

The overall thrust of this project is to remodel the 61,490 NASF and 118,140 GSF English Building, located on the west side of the quadrangle, into an office/classroom building to match the facility with the program it will serve in the foreseeable future. The English Building was originally constructed as a Women's Building some 75 years ago with two subsequent additions in 1913 and 1923 to provide a facility to house the home economics and the women's physical education program. The very nature of the original programs indicated a need for large rooms which makes the current use of the building very awkward because the English Department requires a large number of offices to house faculty and teaching assistants. The gymnasiums and locker rooms previously used by physical education are inappropriate for any other use without extensive remodeling. The proposed remodeling will give the Department of English adequate classroom and office space to conduct its program in space designed to meet current needs. The Department of English will be able to house the Business and Technical Writing Division of the Department in the English Building for the first time making those faculty members feel that they are a part of the Department of English.

The phase currently requested involves renovation of the northwest section of the building as well as the west center portion of the building on the first, second and third floors. The remodeling will involve the installation of an elevator and the construction of new structural floors in the areas to be remodeled. The scope of the remodeling in this phase will be substantial because everything will be new within the outside walls. The remodeling is justified because the English Building is a permanent building and will provide good service for years to come after remodeling. The remodeling basically will provide office space, three instructional areas and involves remodeling 22,500 net assignable square feet. There will be an equipment request in FY 1985 to support this Phase III request.



## SPACE REALIGNMENT, RENEWAL AND REPLACEMENT

### College of Commerce Remodeling - (\$148,400)

The College of Commerce and Business Administration has experienced a 9.5% annual growth rate in undergraduate majors since the Fall of 1970. Similar growth has been experienced in transfer students and the graduate student population. The expansion from a 3,000 student population to more than 5,000 in less than a decade has severely impacted available office and classroom space. Additional classroom space has been allocated to the College but new office space is not available.

The request is designed to alleviate this pressing problem by expanding the number of offices within the current space available to the College. The project will expand ten offices (2,794 NASF) in Commerce West into twenty offices. Work includes installing ten doorways from main corridors; ducting revisions and balancing of air handling systems, electrical revisions; drop ceilings; and the construction of dividing partitions. There is an equipment request associated with the project.

### Animal Science Lab Chilled Water Conversion - (\$77,000)

The existing equipment that produces chilled water at the Animal Sciences Laboratory is about to fail. It has been determined that the best solution to the problem is to use chilled water from the Library Air Conditioning Center. There is an FY 1984 utility request to extend a chilled water line to the building. This request involves removing the existing defunct compressors and condensers and installing the new pumps, valves and piping to use chilled water from the Library Air Conditioning Center. This request will save some operating costs because coal-produced steam will be an inexpensive energy source.

### Newmark Laboratory Remodeling - (\$363,000)

The remodeling planned for the Department of Civil Engineering in the Newmark Laboratory will modernize the existing space providing for much more efficient utilization of the building. The proposed changes will permit the consolidation of the administrative functions of the department

and will provide for the improvement of instructional space, for increased space for graduate research assistants in the research laboratories, and for additional office space for new faculty.

The UIUC Department of Civil Engineering is one of the most distinguished departments at UIUC. That distinction derives, in part, from the pioneering work of its faculty in the areas of structures and materials. It also derives from the capacity of the Department to move rapidly into vital areas of research and instruction. This project will permit the consolidation of efforts in advanced environmental control technology, risk assessment and management, and transportation systems with an emphasis of rural and urban roadway and highway systems and railroads.

Upon the completion of this remodeling project, the Department of Civil Engineering will vacate its space in Talbot Laboratory (9,813 NASF) and in the Woodshop and Foundry (4,622 NASF). The vacated Talbot Laboratory space will be reassigned to other units in the College of Engineering. Moving the Department of Civil Engineering out of the Woodshop and Foundry is the first step in clearing that building (now over 80 years old) for eventual razing, creating a potential building site at the center of the Engineering campus (on the south side of Springfield Avenue between Wright Street and Mathews Avenue).

#### Roger Adams Laboratory Remodeling - (\$186,800)

This request involves remodeling 1,200 NASF on the Mezzanine "C" level of Roger Adams Laboratory to develop an office area for Chemical Engineering staff and graduate students. Chemical Engineering has experienced a significant growth in enrollment since 1971, primarily due to demand generated by energy/pollution problems faced by industry. Unfortunately, space allocated to the Department has not kept pace with its expansion. This project serves the dual purpose of providing additional space for Chemical Engineering, and completing a portion of a multi-phased program designed to upgrade space in Roger Adams Laboratory.

The area on Mezzanine "C" projected for remodeling is presently "open" with no permanent walls. This request involves constructing two concrete block walls; installing new lighting; painting the rooms; and adding central air conditioning.

Accessibility Improvements - (\$176,100)

This project includes the conversion of old rest room facilities in ten (10) permanent buildings and new paraplegic ramps in four buildings for accessibility by handicapped students, faculty, employees and/or guests of the Urbana-Champaign campus. Work would include the widening of water closet shelters, installation of grab bars, reswinging of doors, lowering of mirrors and towel dispensers, and in some cases the removal of urinals or other stools to provide access space required. Upon completion of the rest room portion of the project, eighteen (18) rest rooms will be converted in buildings that presently have rest rooms which are not accessible. These ten (10) buildings have 159 classrooms and 69 instructional laboratories plus offices, gymnasiums, pools, etc.

The second portion of the project involves the installation of a paraplegic ramp at Illini Hall and the Institute of Labor and Industrial Relations Building. The existing means of entrance/exit at both buildings does not meet current code requirements for paraplegic access. The existing ramp at the Institute of Labor and Industrial Relations Building is located at the rear of the building and has a slope of 1:5.2. New code requirements recommend a maximum slope of 1:12 in new construction. Illini Hall is presently not accessible to handicapped students. Space in Illini Hall is assigned to University Extension, Mathematics, Police Training and Illini Publishing Company. This request is a portion of an overall accessibility improvement program at the Urbana-Champaign campus to make permanent buildings readily accessible to the handicapped. There will be similar requests in future years for this type of improvement.

Animal Room Improvements - (\$122,900)

The project involves upgrading the existing animal holding facilities in the Electrical Engineering Annex to a level required by Federal Regulations. Federal grant agencies have threatened to withhold research funds unless the facilities are improved. This is the third of a five-phased program to bring existing facilities into compliance with the U.S. Department of Health and Human Services standards and regulations governing the humane handling, care and treatment of laboratory animals.

The work to be done in the Electrical Engineering Annex involves remodeling 853 NASF on the first floor. The project includes modification of the ventilation system, dropping ceilings, installing sinks, partition changes, and installing a cage washer and a bottle filler. These improvements will allow the Department of Electrical Engineering to do a better job of caring for the animals, while the cage washer and bottle filler will save animal caretaker time. The Urbana campus anticipates that after project completion, the facility will serve the animal holding needs for the Department of Electrical Engineering for a number of years. There is an equipment request associated with this project.

Sprinkler Systems - (\$405,300)

This request involves sprinkler protection for the Natural History Building, Arcade Building and Coble Hall. The Natural History Building contains many of the instructional laboratories for the School of Life Sciences and houses the Department of Geology. This building is located on the Quadrangle and fits into the Urbana-Champaign campus long range safety plan to eliminate safety deficiencies in permanent buildings.

The Natural History Building portion of the project consists of planning and installing an overhead sprinkler system for the south portion (55,000 NASF) of the building. The system is necessary to comply with the Chicago Building Code for multi-story buildings and to provide consistent, high quality fire protection for both the building and the lives of its occupants. The north portion (36,000 NASF) of the Natural History Building is already supplied with sprinkler equipment. Therefore, this project will be an extension of the existing north section. The installation will involve plumbing work and minor construction and repair work to run the required piping into each room.

The Arcade Building has the same type of construction as the Natural History Building and does not meet current codes. This request involves extending the sprinkler system to protect the 7,500 NASF on the second floor (Mathematics Department) and the storage area on the third floor. The Arcade Building is located on Wright Street near Green Street and is considered a permanent campus building.

Coble Hall is located across the street from the Administration Building and provides office space for the Chancellor, Vice Chancellors, Business Affairs, Payroll Division, and faculty of the Department of Mathematics. Following the anticipated Summer of 1983 completion of the Lester H. Swanlund Administration Building which will house the Chancellor and Vice Chancellors, Coble Hall's primary occupants will be the Graduate College, Business Affairs, and faculty of the Department of Mathematics. This portion of the project includes the planning and installation of an overhead sprinkler system for the second and third floor (7,800 NASF). The system is necessary to comply with the Chicago Building Code for multi-story buildings and to provide consistent, high quality fire protection for both the building and the lives of its occupants. The basement and first floor (8,954 NASF) of Coble Hall had a sprinkler system installed when major remodeling was completed in the late 1960's.

Elevator Installations - (\$187,700)

This request is a part of an overall program to meet Federal and State laws requiring that all programs be accessible to paraplegic and other handicapped persons. University High School has four floors containing 26,129 NASF and 41,730 GSF and houses the laboratory school for the College of Education. It is a permanent, University of Illinois building, which must conform with standards set by Section 504 of the Rehabilitation Act of 1973.

This project involves the installation of an elevator in University High School, modification of a restroom for men and women, as well as the construction of a ramp at the south entrance to the building.

Classroom Renovation - (\$161,800)

This project is the first year of a multi-phased program to upgrade and modernize a number of the older classrooms on campus. Forty-five percent of the classrooms are over 50 years old and several have not been substantially altered in many years. This phase will remodel nine rooms in Engineering Hall which are centrally located and heavily used. These rooms in Engineering Hall are over 80 years old. The goal of this project is to modernize the classroom space to support current methods of instruction.

The work proposed will improve audio visual capability by adding variable lighting controls and blackout shades, replace pitted chalkboards, install suspended ceilings, adding more effective heating and generally modernize their appearance. Also three small rooms are to be remodeled into two larger rooms to accommodate larger class sizes. To properly equip the rooms, a separate equipment request in the amount of \$28,000 is included in this budget.

Roof Replacements I - (\$468,000)

This project will provide for the replacement of all or a part of the roofs on the following three buildings:

Law Building was constructed in 1955 utilizing a 4 ply tar and gravel roof over 5/8" fiberglass insulation. This roof has surpassed its 20 year life expectancy by eight years, and leaks have developed in numerous areas, especially over the Law Library. The insulation on most of the roof area (43,000 sq.ft.) has become saturated due to the leaks, and the membrane is badly deteriorated in all areas. This project will entail removal of all existing materials down to the deck, and installation of new insulation and roof membrane on all roof levels on this building.

Bevier Hall was constructed in 1956 with large areas of tar and gravel roofing over 2 inch rigid insulation on a concrete deck. This roof has surpassed its 20 year life expectancy by many years, and numerous leaks have developed, saturating most of the insulation. This project will replace only those areas where leakage has become a chronic problem (levels A, C, D-2, 25,000 sq.ft. of 38,500 sq.ft. overall) by complete removal of existing materials, and installation of new insulation and roof membrane.

Civil Engineering Building (Phase II) was constructed in 1965, and the roofing (tar and gravel, 1 1/2" fiberglass insulation) has deteriorated prematurely, allowing serious leakage in numerous areas. Due to the serious nature of the leakage, three levels (7,000 sq.ft. of 57,000 sq.ft. overall) are in the process of replacement with R&R funds, however, serious problems still exist. This project includes replacement of three more levels (10,000 sq.ft.) with new insulation and roof membrane, and will control the serious leakage problems on the fourth floor. Completion of

this project will result in new roofing on 30% of the building; however, this replacement program will need to continue due to the severe deterioration of this roof.

This request is part of an overall program developed to reroof many of the Urbana campus buildings requiring new roofs. There will be similar requests in future years to reroof major buildings.

Astronomy Building Remodeling - (\$273,400)

This project involves the conversion of a large 3,291 NASF open area on the second floor of the Astronomy Building into private offices for the Office of Computer Services, and laboratories for Astronautical research (darkroom, library and star chart room, microphotometer room, etc.) for the Department of Astronomy. The Center for Advanced Computation, for which the building was originally built with Federal funds in 1971, suffered a severe cutback in its Federal funding in 1978. In order to provide better utilization of the space in that building and to fulfill a long-recognized need, the Urbana campus moved the Astronomy Department to the Advanced Computation Building and moved the remaining units of the old Center for Advanced Computation to the Observatory space which was vacated by Astronomy.

Although the total available space in the Astronomy Building is adequate for Astronomy's needs, several portions of this space (the second floor and the roof) currently are not in usable form. This means that, until the proposed remodeling is accomplished, both the research and teaching efforts of the Department cannot be optimally performed. For example, those observers who require darkroom facilities and instructors who conduct night sky observing sessions will have to shuttle back and forth between the old Observatory Building and the Astronomy Building. Also, a teaching lab in Noyes Lab will now have to be retained until adequate replacement facilities can be provided through this project.

The work to be done involves replacing the existing elevated floor (steel panels supported by jacks) with a permanent floor, constructing partitions with doors, installing three windows in the exterior wall, relocating darkroom equipment from the Observatory to the new rooms in this project, and constructing a platform on the roof for a telescope viewing laboratory.

Loomis Laboratory Remodeling - (\$90,100)

This request involves the installation of an emergency power source to operate a limited number of pieces of research apparatus, operate building sump pumps, and to provide lighting for stairways and interior hallways of Loomis Laboratory of Physics Building.

The hazards and expenses related to the lack of an emergency power source could be minimized by an emergency generator. As currently planned this generator could be operated by an engine fueled by either city gas or by propane gas stored on site and equipped with automatic cut over devices to start the engine and supply power. The new system would provide backup power to: 1) selected research apparatus, especially vacuum pumps, on a limited emergency basis in order to keep from losing an experiment that has been underway for a substantial period of time; 2) sump pumps in the basement as a protection against the flooding of mechanical equipment and instructional aids; 3) fume hoods designed for the emission of toxic materials from the Laboratory; and 4) lights placed in strategic positions in the building to aid in emergency exits.

Visual Arts Laboratory Remodeling - (\$295,900)

This project will complete Phase II of the remodeling for the Visual Arts Laboratory. It will provide cinematography facilities, a studio for photography/cinematography, and facilities to introduce photography to freshman art students. Currently, it is impossible to meet the student demand for the courses in this area of study, and the facilities are taxed to the limit by students enrolled in the courses.

Included in the project are construction of new walls, installation of additional power requirement, additional shelving, and revisions to heating and air conditioning. The first phase of this program involving a cost of \$162,200 was funded as a part of the FY 1976 Capital Budget and included needed expansion for photographic laboratories. This second phase (6,117 NASF) is to fund the required remodeling for a Cinematography Shooting Studio and several small darkrooms for students and faculty in the Fine Arts Building. Major heating and ventilation changes need to be completed for optimal use of space created by remodeling Phase I and II. A separate equipment request in the amount of \$118,000 is also included in this budget request for equipping the Cinematography Studios and darkrooms.



Radiology Laboratory--S.A.C. - (\$172,300)

The decentralized radiology laboratory locations at the Veterinary Medicine Teaching Hospitals create an inefficient use of staff. It is proposed to consolidate the radiology laboratory in the Small Animal Clinic to provide a more efficient facility. This can be done by expanding the present small animal radiology suite into the ambulatory garage (Room 198 and the bulk storage room--Room 186). By remodeling these rooms and the existing small animal radiology suite an efficient facility can be developed. This new arrangement would encourage full utilization of small animal services with additional diagnostic information and documentation of disease while easing the burden of the anesthesia staff which must currently transport small animals to and from the Large Animal Clinic for special radiographic procedures. This project has a related equipment request of \$150,000.

Elevator Replacement - (\$179,000)

The Lincoln Hall elevator was originally installed in 1930, and is of the single automatic type control with manual controls on the door. The elevator has no leveling devices and is difficult for paraplegics to use. A modern elevator car will be installed with selective-collective controls, automatic leveling system and power door controls for ease of operation by paraplegics. This improvement will allow handicapped individuals easy access to all five floors and the 33 classrooms in the building, including 14 classrooms on the second and third floors. This request is part of an overall program to replace obsolete elevators which are inadequate and difficult to maintain.

Gregory Hall Stair Enclosures - (\$428,300)

Gregory Hall, a 65,952 NASF and 109,393 GSF building, presently has two dead end corridors with no fire-rated exits. With 33 classrooms, plus heavily used instructional laboratories and offices, this building is one of the most heavily utilized facilities on the campus. As a result, safe exits in the event of a fire are desperately needed.

The project includes the construction of hollow steel and wired glass stair enclosures with magnetic door holders and smoke detectors on each floor. Also included is the installation of illuminated exit signs, panic hardware on exterior doors and the replacement of existing windows in the stairwells with metal and wireglass. A new ground level exit will be constructed for the west stairwell so occupants have immediate access to the outside of the building. This request is part of an overall safety related program to provide adequate means of egress in permanent buildings that do not have enclosed stairways.

Installation of Safety Showers - (\$71,900)

This is a safety oriented request involving the installation of safety showers in 29 locations in Burrill Hall and three locations in Morrill Hall. Due to the activities which are conducted in these facilities, safety showers must be installed to bring the facility into compliance with OSHA safety regulations. Additionally, the Urbana campus Office of Environmental Health and Safety identified these areas as vulnerable because of dangerous chemicals used in the laboratories. This request is part of an overall program to correct safety deficiencies in the Urbana campus' permanent buildings.

Noyes Laboratory - Fume Hood Improvements - (\$245,200)

This project involves the renovation of fume hoods in Noyes Laboratory as part of an overall program to improve fume hoods throughout the campus. Improvements would be made to 35 fume hoods located in Rooms 157, 260, 350A, 350B, 355, 357, 450 and 450A Noyes Laboratory. Duct work must be replaced or repaired and the hoods and fan housings must be made leak proof. Existing leaks in the hoods and ducts allow toxic materials to escape and enter into offices and laboratories located on floors above these rooms. In addition, fans on most of the hoods must be relocated above the roof to meet current code requirements.

David Kinley Hall Remodeling--Room 114 - (\$304,100)

This project consists of the complete renovation of a 2,537 square foot lecture room in David Kinley Hall. This project is one in a series of efforts to upgrade the 40-50 year old lecture halls. These facilities are totally outdated in ventilation, heating, lighting, seating and are inadequate for any audio-visual service. Presently this room has a limited use due to the marginal services provided.

The remodeling of this room would consist of an air conditioning/heating system, a new ceiling and lights, new floor tile and seats, plus necessary installations and remodeling to provide audio-visual capabilities needed for certain lectures. The air conditioning/heating system modification is essential to provide temperature controls and ventilation when the audio-visual services are in use. These services require that all doors and windows be closed with black-out shades to prevent light from entering the room during a film showing. There is an equipment request related to this remodeling project.

Cooling Towers Remodeling - (\$176,500)

This project includes the complete replacement of the discharge stacks on the upper deck of two of the three sets of cooling towers at Abbott Power Plant. New fan mounts must also be installed on one tower. Continued deterioration could affect the ability to generate electricity which, in turn would cause our electrical power rates to increase rapidly, since it would no longer be possible to meet contractual commitments to the Illinois Power Company. This request is a part of a phased program to renovate the cooling towers.

## PLANNING

### Auditorium Remodeling - (\$150,000)

This project involves the complete replacement of the domed roof of the Auditorium. The building was originally constructed in 1908, prior to the existence of comprehensive building codes. As a result, the facility is in substantial violation of current codes and contains potentially flammable materials used in the construction of the structure. In addition, the metal roof dome has deteriorated to the extent that further repairs cannot be made.

The proposed remodeling of this facility will include the complete replacement of all wooden structural members with fireproofed metal framing and non-combustible roof and ceiling material, necessary mechanical and electrical changes, and major renovation of the building, including new seating, to make the space more usable.

The Auditorium has long been a campus landmark and it continues to serve as a site for many campus functions -- lectures, student and faculty meetings, musical events, movies, examinations, etc. This historically significant building is basically of sound construction and its value is sufficiently high that razing the structure is not warranted. Also, renovation of the building is considered to be considerably less expensive than constructing equivalent new space.

Planning funds (\$150,000) are requested in FY 1984 to design the new roof system and related mechanical and electrical changes. The roof replacement and related work is programmed to be requested in FY 1985.

The University has attempted to secure private funds to finance all or a portion of the renovation of the Auditorium. Although some donations have been received for this project, the final outcome of the fund raising campaign is not definite at this time. With the resolution of the campaign drive, it may be necessary to revise the request for State funds.

PART IV

FISCAL YEAR 1984 ENERGY CONSERVATION/FUEL CONVERSION REQUEST

ENERGY CONSERVATION/FUEL CONVERSION REQUEST  
FY 1984

Funding for the University's Energy Conservation/Fuel Conversion Program was first requested in FY 1981 to respond to the precipitous increase in energy costs. Since operational measures to control energy consumption have already been implemented to the maximum extent possible, development of a capital improvements program to address energy usage remained the only viable alternative to control energy cost increases. The program received enthusiastic support from the Illinois Board of Higher Education, Bureau of the Budget, Legislature, and the Governor in FY 1981 and again in FY 1982. In FY 1983 the General Assembly approved the appropriation of \$15,000,000 for the installation of a pollution control system at the Abbott Power Plant. These funds will supplement an FY 1981 appropriation of \$6,900,000 for the reconversion of three boilers to coal firing.

In addition to attracting significant funds from State sources, the University has pursued other sources of funding to support energy conservation measures. For example, during FY 1982 approximately \$1.4 million of State capital funds for energy conservation projects were used as matching funds to obtain an additional \$1.4 million of funds from the United States Department of Energy for energy conservation projects at the Chicago campus. The University also expects to receive approximately \$500,000 of Federal energy conservation funds in FY 1983.

Despite the funding received by the University for the past three years, the need for funding of additional energy conservation/fuel conversion projects remains critical. Energy costs are projected to increase 15-20% during FY 1983 and another 20% during FY 1984. Utilities price increases of this magnitude can only be controlled if adequate funding is provided for energy conservation.

To continue implementation of the Energy Conservation/Fuel Conversion Program, the University is requesting \$8,831,300 in energy conservation capital improvements for FY 1984. The request consists of 34 projects. Table 1 displays these projects in priority order based on their calculated "simple" payback (calculated according to IBHE/CDB instructions).

Two fuel conversion projects are included in the program for FY 1984. The project at the Health Sciences Center will convert two boilers to coal burning, and thereby provide the center with the option of using a less expensive fuel. Also, a project to connect the University Center to the Health Sciences Center's power plant is requested. Costs for both fuel conversion projects will be estimated upon further review of the Coal Conversion Feasibility Study by University and Capital Development Board staff and the Governor's Task Force on Energy Conservation and Fuel Conversion.

TABLE 1  
FY 1984 ENERGY CONSERVATION REQUEST  
PROJECT PRIORITY LIST  
ALL UNIVERSITY

Priority	Campus	Project	Payback	Project Cost	Cumulative Total
1	UIC-UC	Automatic Light Dimming Systems - Main Library	1.09	\$ 147,000	\$ 147,000
2	UIC-UC	Install Reverse Osmosis Deionization System - SEL	1.24	115,800	262,800
3	UIC-HSC	Install Reverse Osmosis Deionization System - MSA	1.29	166,400	429,200
4	UIC-HSC	Fan Volume Reduction - Dentistry Building	1.30	40,800	470,000
5	UIC-UC	Fan Volume Reduction - Art & Architecture Building	1.31	63,000	533,000
6	UIC-HSC	Supplementary Cooling System for 1st Floor Lab - Pharmacy Building	1.33	58,700	591,700
7	UIC-UC	Install Modular Chillers, Night Temp. Setback & Modular High-Efficiency Boilers - Peoria Street Building	1.65	144,800	736,500
8	UIC-HSC	Modify HVAC System - Rockford School of Medicine	1.81	125,300	861,800
9	UIUC	Central Supervisory Control - 16 Buildings	1.89	520,000	1,381,800
10	UIUC	Ventilation System Retrofit - Morrill Hall	1.94	535,000	1,916,800
11	UIC-HSC	Install Auxiliary Reciprocating Chiller - Peoria School of Medicine	2.54	65,300	1,982,100
12	UIUC	Domestic Hot Water Retrofit - Six Buildings	2.67	48,300	2,030,400
13	UIUC	Air Conditioning System Revisions - Law Bldg.	3.01	243,100	2,273,500
14	UIC-HSC	Modify Fan System - Nursing Building	3.20	202,400	2,475,900
15	UIUC	Resource Recovery Plant	3.20	1,900,000	4,375,900
16	UIUC	Temperature Control Remodeling & Replacement - 12 Buildings	3.40	1,079,100	5,455,000
17	UIUC	Energy Use Efficiency Improvement - Morrill Hall	3.73	194,000	5,649,000
18	UIUC	Reheat Systems Zone Control - 14 Buildings	3.73	391,700	6,040,700
19	UIUC	Conversion to Central Fan System - Armory	3.80	81,300	6,122,000
20	UIUC	Conversion from Cast Iron to Fin Tube Radiation - Animal Science	3.85	297,000	6,419,000
21	UIUC	Install Air Curtains Above Entryways - Three Buildings	4.04	44,000	6,463,000
22	UIUC	Summer-Winter Ventilation Rate - Three Buildings	4.10	38,500	6,501,500
23	UIUC	Conversion to Zoned Ventilation - Arts & Design Building	4.77	194,900	6,696,400
24	UIUC	Radiation Zone Control - Seven Buildings	4.83	99,100	6,795,500
25	UIUC	Pipe Insulation - Electrical Engineering Building	4.89	31,800	6,827,300
26	UIUC	Reheat Systems Zone Control - 11 Buildings	4.95	266,400	7,093,700
27	UIUC	HVAC Retrofit - Two Buildings	5.10	440,700	7,534,400
28	UIC-HSC	Install Supplementary Air Handling System - Dentistry Building	5.23	83,600	7,618,000
29	UIUC	Steam Absorption Machine Control - Four Buildings	5.37	145,100	7,763,100
30	UIUC	Domestic Hot Water Control - Four Buildings	5.47	23,500	7,786,600
31	UIUC	Radiation Zone Control - 28 Buildings	5.51	496,500	8,283,100
32	UIUC	Domestic Hot Water Control - Six Buildings	5.55	51,600	8,334,700
33	UIUC	Reheat Systems Zone Control - Four Buildings	6.38	137,200	8,471,900
34	UIUC	Animal Room Ventilation - Three Buildings	6.62	359,400	8,831,300



TABLE 2  
FY 1984 FUEL CONVERSION PROJECTS  
PROJECT LIST

<u>Priority</u>	<u>Campus</u>	<u>Project</u>	<u>Project Cost</u>
1	UIC-HSC	Convert Boilers to Coal Burning	*
2	UIC-UC	Interconnect Two Chicago Power Plants	*

\*Project definition and costs under study.

## FUEL CONVERSION

### Convert Boilers to Burn Coal - Chicago Health Sciences Center Steam Plant

Boilers Number 1 through 5 are capable of being reconverted to coal-firing. Two basic criteria have been identified for determining the numbers of boilers to be reconverted:

1. Provision for a fallback fuel source which will cover total system requirements in the event of shortages of natural gas or fuel oil.
2. Provision of an alternate source of fuel with lower purchase cost to offset the use of higher cost fuels.

University staff will use these criteria to further study the Coal Conversion Feasibility Study prepared by A. Epstein and Sons, Inc. The results of this study will determine the scope of the reversion work.

### Interconnect Two Chicago Power Plants

This project is to provide for a physical interconnection between the power plants of the Health Sciences Center and University Center. The distance between the plants is approximately eight city blocks in a straight line due east from the Health Sciences Center.

The installation, in direct buried conduit, is to pass through urban renewal property now vacant and under city streets.

The Health Sciences Center Steam Plant would supply energy to the University Center's High Temperature Water (HTW) system during most of the year if sufficient coal-firing boiler capacity is available at the Health Sciences Center Steam Plant or the planned refuse fueled steam plant comes on line. The potential benefits include:

1. Operational savings at the University Center HTW Plant.
2. Lower fuel costs through the use of coal should the reversion project be completed.

Costs for both fuel conversion projects will not be estimated until the University conducts further study of the Coal Conversion Feasibility Study prepared by A. Epstein and Sons, Inc.

TABLE 3  
FY 1984 ENERGY CONSERVATION REQUEST  
PROJECT PRIORITY LIST  
UNIVERSITY OF ILLINOIS CHICAGO - UNIVERSITY CENTER

<u>Campus Priority</u>	<u>University Priority</u>	<u>Project</u>	<u>Pay- Back</u>	<u>Project Cost</u>	<u>Cumulative Total</u>	<u>BTU's Saved/Yr (In Millions)</u>
1	1	Automatic Light Dimming Systems - Main Library	1.09	\$ 147,000	\$147,000	8,450.0
2	2	Install Reverse Osmosis Deionization System - SEL	1.24	115,800	262,800	11,185.0
3	5	Fan Volume Reduction - Art & Architecture Building	1.31	63,000	325,800	4,421.0
4	7	Install Modular Chillers, Night Temp. Setback and Modular High-Efficiency Boilers - Peoria St. Building	1.65	144,800	470,600	10,304.0

ENERGY CONSERVATION - CHICAGO

University Center

Automatic Light Dimming Systems - Main Library - (\$147,000)

This project calls for the installation of Enetron automatic light dimming systems on all 264 lighting circuits in the Main Library. The Enetron system works in two modes. The first employs light sensing fiber optics allowing the system to control a lighting circuit to provide only enough illumination to maintain the area served. The fiber optics sense the available natural light entering the area from windows. If it is not adequate to maintain the desired illumination level, the system provides enough light from the fixtures to do so. Approximately, 75% of the lighting circuits in the library building serve areas that receive significant levels of natural light. A test of a similiar system, conducted at the Health Sciences center during the winter of 1981-1982, revealed a measured 56.9% decrease in circuit wattage.

The second mode of operation for the Enetron is simply that of shutting down lighting circuits automatically in areas not used during hours the Library is closed.

Install Reverse Osmosis Deionization System - Science and Engineering Laboratory - (\$115,800)

This project proposes the replacement of the present laboratory steam still. A reverse osmosis deionization system of 6400 gpd will be installed. The present steam still will be decommissioned by having its lines capped. A field erected reverse osmosis unit will be installed to provide the necessary distilled water. The high efficiency reverse osmosis deionization system will produce high quality water at a lower cost than the current laboratory steam still system.

Fan Volume Reduction - Art and Architecture Building - (\$63,000)

The present ventilation at the Art and Architecture Building is provided by a dual duct, constant volume system. This project proposes capping various interior mixing box hot duct connections. All 68 mixing boxes identified will have their hot duct connections capped. Further work will result in a 33% speed reduction to the main supply and return fans. A system rebalance based on the modified system configuration shall be performed on the entire ventilation system. The capping of hot duct connections will prevent energy waste due to damper leakage of the mixing boxes. The 33% fan volume reduction will also eliminate unneeded ventilation area which is heated or cooled and exhausted.

Install Modular Chillers, Night Temperature Setback and Modular High Efficiency Boilers - Peoria Street Building - (\$144,800)

The building currently uses one 271 ton chiller to provide summer cooling. During evenings and weekends, only three areas of the building require service; only two areas require concurrent service. However, the present equipment operates most efficiently at maximum capacity. This project proposes the installation of three 30 ton modular chillers to replace the high-volume chiller in partial load conditions.

The project also proposes the installation of a Honeywell W902A night temperature setback system. This operation will reduce energy usage in the building's off-hours during the heating season. The system is comprised of a microprocessor control with sensors to monitor outdoor temperature and time management controls to engage a 20°F setback mode for the supply water. A low-limit thermostat will also be installed to protect the piping systems from freeze-up.

The current heating system consists of two 125 HP boiler units; one burns oil and the other burns natural gas. The equipment is antiquated and its capacity surpasses the building's heating requirements. This project proposes replacing these boilers with two 40 BHP Weil-McLain gas boilers with power burners.

TABLE 4  
FY 1984 ENERGY CONSERVATION REQUEST  
PROJECT PRIORITY LIST  
UNIVERSITY OF ILLINOIS CHICAGO - HEALTH SCIENCES CENTER

<u>Campus Priority</u>	<u>University Priority</u>	<u>Project</u>	<u>Pay- Back</u>	<u>Project Cost</u>	<u>Cumulative Total</u>	<u>BTU's Saved/Yr (In Millions)</u>
1	3	Install Reverse Osmosis Deionization System - MSA	1.29	\$ 166,400	\$166,400	16,092.0
2	4	Fan Volume Reduction - Dentistry Building	1.30	40,800	207,200	2,919.0
3	6	Supplementary Cooling System For 1st Floor Lab - Pharm. Building	1.33	58,700	265,900	2,350.0
4	8	Modify HVAC System - Rockford School of Medicine	1.81	125,300	391,200	7,573.0
5	11	Install Auxiliary Reciprocating Chiller - Peoria School of Medicine	2.54	65,300	456,500	1,802.0
6	14	Modify Fan System - Nursing Building	3.20	202,400	658,900	7,500.0
7	28	Install Supplementary Air Handling System - Dentistry Building	5.23	83,600	742,500	2,000.0

ENERGY CONSERVATION - CHICAGO

Health Sciences Center

Install Reverse Osmosis Deionization System - Medical Sciences Addition - (\$166,400)

This project proposes the replacement of the present laboratory steam still with a reverse osmosis deionization system.

The existing steam still provides treated water for the research laboratories and clinic facilities in the building. The purity of the water produced is decreasing while the cost of producing the distilled water is increasing. This project would replace the steam still with a low cost, high efficiency reverse osmosis deionization unit that will produce very high quality water.

The proposed reverse osmosis deionization unit will be installed in the penthouse of the Medical Sciences Addition building, and connected to the building's treated water system. The proposed new unit will be able to produce 9,600 gallons of high-quality water per day.

Fan Volume Reduction - Dentistry Building - (\$40,800)

The present ventilation is provided by a dual duct, constant volume system. This project proposes capping approximately forty interior mixing box hot duct connections. The main supply and return fan speed capacity will be reduced by 33% of current capacity. A system rebalance based on the modified system configurations will be performed on the entire ventilation system. The capping of hot duct connections will prevent energy waste due to damper leakage of the mixing boxes and the 33% fan volume reduction will eliminate the unneeded heating and cooling of ventilation air.

Supplementary Cooling System for First Floor Lab - Pharmacy Building - (\$58,700)

This project calls for the installation of separate package cooling systems to enable critical building laboratories to operate on a 24-hour basis. Currently, to accommodate the critical laboratories on a 24-hour basis, the center must operate a 100 ton chiller in mild weather and a 200 ton chiller on weekends and evenings during summer.

This project proposes that a 30 ton roof-top chiller be purchased and installed to enable cooling of critical areas alone, thus permitting the shut down of the larger chiller units during the "off" hours of the day. Time clocks would also be installed on the ventilation systems which would not be run after 7:00 p.m. or before 7:00 a.m. during the normal work week. Variable volume boxes would be added to all critical laboratory areas served by this cooling system.

Modify HVAC System - Rockford School of Medicine - (\$125,300)

Currently, the East building and North/South buildings are cooled by two independent chilled water systems. The system that serves the North/South buildings was built as a part of a two phase remodeling and renovation project and utilizes two air cooled compressor-condenser units. The system that serves the East building was built as a part of that building addition project and uses a centrifugal chiller machine.

The proposed project calls for the interconnection of these two independent cooling systems. This would permit operation of the centrifugal chilling machine to serve all three facilities on the days when the reciprocating system cannot handle the load. During less severe weather the smaller unit could handle the entire load and reduce the demand on the large chiller. It has been calculated that the run time of the 300 ton chiller can be reduced by 900 hours annually.

A small, high-efficiency boiler will be installed to provide re-heat during the summer for the Animal Laboratory Facility, which requires precise temperature control. Currently, one of the main boilers must be run during the summer to provide the needed re-heat capability. Savings will derive from using the smaller boiler that can attain a 75% efficiency as compared to the 45% or below efficiency obtained from the present main boiler when operated for this purpose.



Install Auxiliary Reciprocating Chiller - Peoria School of Medicine - (\$65,300)

There are six air supply units with a total capacity of 91,108 cfm that provide ventilation air. The overall level of ventilation is about 0.8 cfm per sq. ft. except for two small areas -- the animal room and the TV studio.

One 322 ton chiller located outside the building provides all of the cooling capacity. Therefore, even small scale cooling needs encountered on weekends and in the evenings require operation of this high capacity machine.

This project proposes to install an additional chilled water machine with a 70-ton rating. The smaller machine will be run for the smaller weekend and evening loads. It is estimated that a resultant savings of 1.2 kilowatt/ton/hr. will be achieved from the use of the smaller machine. Since the animal rooms run 24 hours a day during the summer cooling season electric savings will be quite large, approximating 528,000 KWH per year.

Modify Fan System - Nursing Building - (\$202,400)

The air handling systems which serve the basement and the 1st floor of the building are constant volume systems with 100% outside air used for ventilation. In each instance, the total amount of air being supplied exceeds the ventilation rate as required by City of Chicago codes.

This project consists of several modifications to these same systems. The first modification will consist of revisions to the existing installed distribution ductwork systems to recirculate air from all areas that allow recirculation under the same City of Chicago code.

A second modification will consist of changes to the existing supply ductwork to the first floor classrooms located in the southwest portion of the floor. This ductwork will be modified to a variable volume configuration.

A third modification consists of the installation of adjustable electronic fan motor controllers to maintain the supply air volumes which will be regulated by the variable volume duct pressure sensors.

Install Supplementary Air Handling System - Dentistry Building - (\$83,600)

The project consists of the installation of a supplemental air handler to serve the interior or central core areas of the building's lower floors. Utilization of this smaller unit to service the core areas will eliminate the necessity of operation of the larger building systems to serve these same areas during times when only the core areas require cooling and/or ventilation.

The primary air supply to the air handler will be interfaced to the building area exhaust systems supplemented with fresh air to achieve code and cooling requirements. The unit will be complete with all coils, zone controls, ductwork, piping and electrical work.

TABLE 5  
FY 1984 ENERGY CONSERVATION REQUEST  
PROJECT PRIORITY LIST  
UNIVERSITY OF ILLINOIS - URBANA-CHAMPAIGN

<u>Campus Priority</u>	<u>University Priority</u>	<u>Project</u>	<u>Pay- Back</u>	<u>Project Cost</u>	<u>Cumulative Total</u>	<u>BTU's Saved/Yr (In Millions)</u>
1	9	Central Supervisory Control - 16 Buildings	1.89	\$ 520,000	\$ 520,000	47,000.0
2	10	Ventilation System Retrofit - Morrill Hall	1.94	535,000	1,055,000	47,103.7
3	12	Domestic Hot Water Retrofit - Six Buildings	2.67	48,300	1,103,300	3,100.0
4	13	Air Conditioning System Revisions - Law Building	3.01	243,100	1,346,400	6,660.0
5	15	Resource Recovery Plant	3.20	1,900,000	3,246,400	101,626.0
6	16	Temperature Control Remodeling and Replacement - 12 Buildings	3.40	1,079,100	4,325,500	54,200.0
7	17	Energy Use Efficiency Improvement - Morrill Hall	3.73	194,000	4,519,500	8,900.0
8	18	Reheat Systems Zone Control - 14 Buildings	3.73	391,700	4,911,200	17,949.4
9	19	Conversion to Central Fan System - Armory	3.80	81,300	4,992,500	3,652.0
10	20	Conversion from Cast Iron to Fin Tube Radiation - Animal Science	3.85	297,000	5,289,500	13,185.0
11	21	Install Air Curtains Above Entryways - 3 Buildings	4.04	44,000	5,333,500	1,866.0
12	22	Summer-Winter Ventilation Rate - 3 Buildings	4.10	38,500	5,372,000	1,600.0
13	23	Conversion to Zoned Ventilation - Arts & Design Building	4.77	194,900	5,566,900	6,986.0
14	24	Radiation Zone Control - 7 Buildings	4.83	99,100	5,666,000	3,510.6
15	25	Pipe Insulation - Electrical Engineering Building	4.89	31,800	5,697,800	1,111.1
16	26	Reheat Systems Zone Control - 11 Buildings	4.95	266,400	5,964,200	9,206.0
17	27	HVAC Retrofit - 2 Buildings	5.10	440,700	6,404,900	14,770.0
18	29	Steam Absorption Machine Control - 4 Buildings	5.37	145,100	6,550,000	4,624.0
19	30	Domestic Hot Water Control - 4 Buildings	5.47	23,500	6,573,500	740.2
20	31	Radiation Zone Control - 28 Buildings	5.51	496,500	7,070,000	15,405.8
21	32	Domestic Hot Water Control - 6 Buildings	5.55	51,600	7,121,600	1,592.5
22	33	Reheat Systems Zone Control - 4 Buildings	6.38	137,200	7,258,800	3,672.9
23	34	Animal Room Ventilation - 3 Buildings	6.62	359,400	7,618,200	9,290.0

## ENERGY CONSERVATION

### Urbana-Champaign

#### Central Supervisory Control - 16 Buildings - (\$520,000)

This project will provide connection of an additional 4 buildings to the master control of the Central Supervisory Control Center. Funds were appropriated in FY 1975, FY 1976, and FY 1979 for installation of the master console and connection to 32 buildings. The center can collect and monitor energy usage data, and regulate individual energy source requirements. The benefits of this system are an increase in utility efficiency, less manhours required for operation and maintenance, and reduced power, steam, and labor costs, as well as improved environmental conditions.

The project also provides for installation of additional control points in 12 buildings funded in prior years. The additional control points will increase energy savings from 14-25 percent over the original estimate.

#### Ventilation System Retrofit - Morrill Hall - (\$535,000)

This project provides for the installation of heat exchangers between the air supply and exhaust systems in Morrill Hall. The present fan system utilizes outside air for ventilation and has a high rate of energy consumption. The heat exchanger system will more efficiently recycle the inside air and result in energy savings. Also, speed control systems will be installed on noncritical fan systems so that the air supply may be modulated according to occupancy requirements.

#### Domestic Hot Water Retrofit - Six Buildings - (\$48,300)

This project includes the replacement of pipe and installation of controls to shut off the domestic hot water systems during the unoccupied time period for each building in order to reduce the amount of steam used by these systems. Work involves the installation of six heat exchangers with pneumatic controls and time clocks, insulation for the heat exchangers and piping, and removal of the existing domestic hot water systems.

The work will be performed in the following buildings:

Gregory Hall	Animal Science
Veterinary Medicine	Morrill Hall
Bevier Hall	Loomis Laboratory

Air Conditioning System Revisions - Law Building - (\$243,100)

This project will provide for converting individual direct expansion refrigeration units on each fan system in the Law Building to a common chilled water system with multiple chillers that can be operated to track cooling demand of the building and minimize resulting peak electrical demand. This new configuration will be compatible with the system in the future building addition and allow for extension of chilled water from the Library Air Conditioning Center.

Resource Recovery Plant - (\$1,900,000)

This project provides for the installation of a solid waste incinerator/steam generation facility at the Abbott Power Plant.

In the near future, three of Abbott Power Plant's six gas/oil-fired boilers will be reconverted to coal-burning. The reconverted boilers will then be capable of supplying approximately 75 percent of the University's yearly steam requirements. The purchase of natural gas will continue to be necessary to supplement the coal-fired boilers, but the price of natural gas is projected to escalate at an average annual rate of approximately 17.5% through 1990. An alternative to the purchase of natural gas is the burning of solid waste fuel.

The University disposes of approximately 53,000 cubic yds. of burnable waste per year which is high in cellulose (BTU content of at least 5,500 BTU per lb.). Usage of this available energy resource would offer significant savings for steam generation at Abbott Power Plant. Savings would also result, as this would reduce the University's landfill space requirements.

Work involves the construction of the solid waste incinerator/steam generation unit to be located at Abbott Power Plant. The burnable waste will be transported to the plant from the solid waste compaction/transfer station located on the south side of the campus.

Temperature Control Remodeling and Replacement - 12 Buildings - (\$1,079,100)

This project will replace the existing controls in twelve buildings for 141 fan systems and 2,700 room thermostats. The controls presently operating in these buildings have, through deterioration over the years, become inefficient and obsolete. New sensors and signaling type controls will be installed to improve the ability to control space temperatures in these buildings.

The work will be performed in the following buildings:

Auditorium	Chemistry Annex
Library	Bevier Hall
Gregory Hall Phase II	Water Resources Building
University Press	Morrill Hall
Smith Memorial Hall	Animal Science Laboratory
Noyes Laboratory	College of Veterinary Medicine

Energy Use Efficiency Improvement - Morrill Hall - (\$194,000)

This request is for three interrelated projects designed to improve the utilization efficiency of process steam, non-potable hot water, and chilled water in Morrill Hall.

The process steam retrofit will allow for the delivery of steam according to individual laboratory needs. Presently, medium pressure (60 psig) steam is supplied to all of the labs on a continuous basis regardless of individual lab steam requirements. This project requires the installation of isolating valves on the individual branches of the process steam lines.

The non-potable hot water retrofit will recover heat from the steam absorption machine's condensate. Under the current system, the excess steam energy is returned to the power plant. This retrofit project involves installation of a water to water heat exchanger which will recover the steam energy and then heat water for the non-potable hot water system requirements.

Looping Morrill Hall's two steam absorption water chillers will allow a more efficient operation in a combined capacity. As separate chilled water circulating systems, they operate most efficiently under full load conditions. But in mildly warm weather, each system operates inefficiently at partial load requirements. The interconnection of these two chilled water systems will permit one absorption machine to shut down while the

other absorption unit is operating under full load conditions. Operation of the system in this mode will result in significant energy savings.

Reheat Systems Zone Control - 14 Buildings - (\$391,700)

This project is to reduce the steam used by the reheat systems located in the ventilation systems of fourteen ventilated buildings. The project includes the installation of valves and controls to isolate the systems by zones and to shut off the converters and pumps at a predetermined outside and space temperature.

The work will be performed in the following buildings:

Burnsides Research Laboratory	Materials Research Laboratory
Civil Engineering Building	Natural Resource Studies Annex
University Press	Rehabilitation Center
Veterinary Medicine Complex	Medical Sciences Building
Water Resources Building	Law Building
Foreign Languages Building	Animal Science Laboratory
Children's Research Center	Smith Memorial Hall

Conversion to Central Fan System - Armory - (\$81,300)

This project provides for the removal of motors, fans, and filters from 56 fan coil units, increasing the duct size to each fan coil unit, and the installation of a bypass valve on each fan coil unit heating coil. Also included is the changing of the thermostat from summer/winter to only heating stat, installation of larger exhaust fans, and the installation of heating and cooling coils in large supply fans on the mezzanine.

Conversion from Cast Iron to Fin Tube Radiation - Animal Science - (\$297,000)

This project will provide for conversion of cast iron radiation to fin tube radiation with cover. The conversion will reduce the amount of steam used by the radiation system by approximately 40 percent.

Install Air Curtains Above Entryways - Three Buildings - (\$44,000)

This project will provide for the installation of five air curtains over the entrances to prevent cold drafts of outside air from entering the buildings (and resulting structural heat loss) as follows:

Library - north and south main entrance  
Institute of Labor and Industrial Relations - south entrance  
Armory - northeast and southwest entrance

Summer-Winter Ventilation Rate - Three Buildings - (\$38,500)

This project will provide the capability to operate fifty fan systems at lower ventilation rates during the heating season. Savings will result from a reduction of outside air which requires heating prior to delivery to the building space.

The work will be performed as follows

Psychology Building	18 fan systems
Law Building	16 fan systems
Music Building	16 fan systems

Conversion to Zoned Ventilation - Arts & Design Building - (\$194,900)

This project provides for the removal of the existing mixing boxes and room thermostats and the installation of heating and cooling coils in each of the hot and cold ducts. Also included are controls for separating each floor in the building into north and south zones and the installation of a duct between the main duct and the room service duct for each supply.

Radiation Zone Control - Seven Buildings - (\$99,100)

This project includes the installation of two zone valves, two zone thermostats and two controllers, referred to outside temperatures on the steam-supplied radiation in six of the seven buildings listed. This will reduce the amount of steam used by the radiation systems. In the Arts and Design Building, the work includes the same as above plus a normally closed valve on the steam to water heat exchanger.

Art & Design and Krannert Art Museum	Harding Band Bldg.
Materials Research Laboratory	Astronomy Building
Aero Lab A & Brake Shoe Laboratory	Chemistry Annex
Digital Computer Laboratory	

Pipe Insulation - Electrical Engineering Building - (\$31,800)

This project includes the insulation of hot surfaces throughout the building, such as steam and condensate lines from the building entrance to zone valves, hot surfaces on converters and steam absorption machines, and exposed piping throughout the building to prevent heat from escaping through an uncontrolled source in the Electrical Engineering Building.



Reheat Systems Zone Control - Eleven Buildings - (\$266,400)

This project is to reduce the steam used by the reheat system associated with the ventilation system of several buildings. Included is the installation of a time clock, zone valves, a normally closed steam valve on the steam to water heat exchangers and a controller to operate the systems according to outside temperatures.

The work will be performed in the following buildings:

Harding Band Building	Psychology Lab
Commerce West	Altgeld Hall
Coordinated Science Laboratory	Astronomy Building
Electrical Engineering Building	Electrical Engineering Annex
Art & Design and Krannert Art Museum	Levis Faculty
Library Seventh Addition	

HVAC Retrofit - Two Buildings - (\$440,700)

This project provides for the replacement of the dual duct ventilation systems in Loomis Laboratory of Physics and the Materials Research Laboratory with a variable air volume (VAV) system. Included in the project are thirty fan systems and 430 variable volume units, one in each room of both buildings. This modification will use less energy to produce the room temperatures desired because the systems will not heat and cool simultaneously.

Steam Absorption Machine Control - Four Buildings - (\$145,100)

This project includes the installation of air operated automatic steam control valves, the removal of solution control valves, and the installation of microprocessing control units. These modifications will reduce the amount of steam used to air condition the buildings.

The work will be performed on absorption machines in the following buildings:

Burnsides Laboratory	Rehabilitation Center
Library Seventh Addition	Psychology Building

Domestic Hot Water Control - Four Buildings - (\$23,500)

This project includes the controls to shut off the domestic hot water systems during the unoccupied time period for each building as follows. Work involves the installation of one time clock, one control valve and controller, and one P. E. switch on each of the domestic water systems.

The work will be performed in the following buildings:

Natural Resource Studies Annex  
Burnsides Research Laboratory  
Foreign Languages Building  
Medical Sciences Building

Radiation Zone Control - 28 Buildings - (\$496,500)

This project includes the installation of the following control devices in the heating systems of the twenty-eight buildings:

zone thermostats	outside sensing controllers
zone valves	float and thermostatic traps
time clocks	condensate return piping
insulation	control tubing

The purpose of the installation is to reduce the uncontrollable heat input to the building during the heating season.

The work will be performed in the following buildings:

Children's Research Center	Natural Resources and Garage
Burnsides Research Laboratory	Noyes Laboratory
Commerce West	Personnel Services Building
Psychology Laboratory	Physics Research
Rehabilitation Center	President's House
Foreign Languages Building	Stock Pavilion
Animal Science Laboratory	Talbot Lab
Altgeld Hall	Transportation
Agriculture Engineering Research	Arcade
Ceramics	Electrical Engineering Annex
Fire Station	David Kinley Hall
Lincoln Hall	Harker Hall
Mumford Hall	English Building
Natural History	Dairy Manufactures Building

Domestic Hot Water Control - Six Buildings - (\$51,600)

This project includes the controls to shut off the domestic hot water systems during the unoccupied time period for each building, thus reducing the amount of steam utilized. Work involves the installation of one time clock, one control valve and controller, and one P. E. switch on each of the domestic water systems.

The work will be performed in the following buildings:

- Institute of Labor and Industrial Relations
- Children's Research Center
- Administration Building
- Harding Band Building
- Astronomy Building
- Turner Hall

Reheat Systems Zone Control - Four Buildings - (\$137,200)

This project is to reduce the steam used by heat systems located in the ventilation systems of four buildings. It involves the installation of 750 reheat coils in 53 ventilation systems.

The work will be performed in the following buildings:

- Digital Computer Laboratory
- Education Building
- Library
- Morrill Hall

Animal Room Ventilation - Three Buildings - (\$359,400)

The use of 100 percent outside air in ventilating animal room spaces in three buildings require large energy expenditures to maintain indoor conditions. This project will provide for the installation of thermal energy recovery devices which can reclaim up to seventy percent of the energy required for each fan system.

The work will be performed in the following buildings:

- Psychology Laboratory
- College of Veterinary Medicine and Annex
- Morrill Hall

PART V

FISCAL YEAR 1984 FOOD FOR CENTURY III REQUEST

FOOD FOR CENTURY III  
FOOD-PRODUCTION RESEARCH PROGRAM

Illinois is one of the foremost states in the nation in the business of food production. From Cairo to Galena, Illinois' farmers marketed over \$10 billion worth of agricultural commodities in 1981--a record \$7.88 billion in cash receipts from crops and \$2.48 billion from livestock. Figure 1 illustrates the cash receipts from Illinois' agricultural commodities as generated by various regions of the state in 1980.

Illinois farmers ranked second nationally in total cash receipts for all crops, producing 17.7 percent of the nation's corn crop and 17.5 percent of its soybeans. They also ranked second nationally in hog production and eighth for total sales of all livestock.

Illinois' agricultural output has a significant impact throughout the world. In 1981, over a third of all cash receipts for Illinois agricultural commodities came from world markets. In total, receipts from Illinois agricultural export shares represented over \$3.62 billion, ranking Illinois number two among all states in total agricultural exports. Illinois also ranked second in both feed grains and soybeans, providing 15.9 percent and 17.3 percent of the nation's total export shares in those two categories.

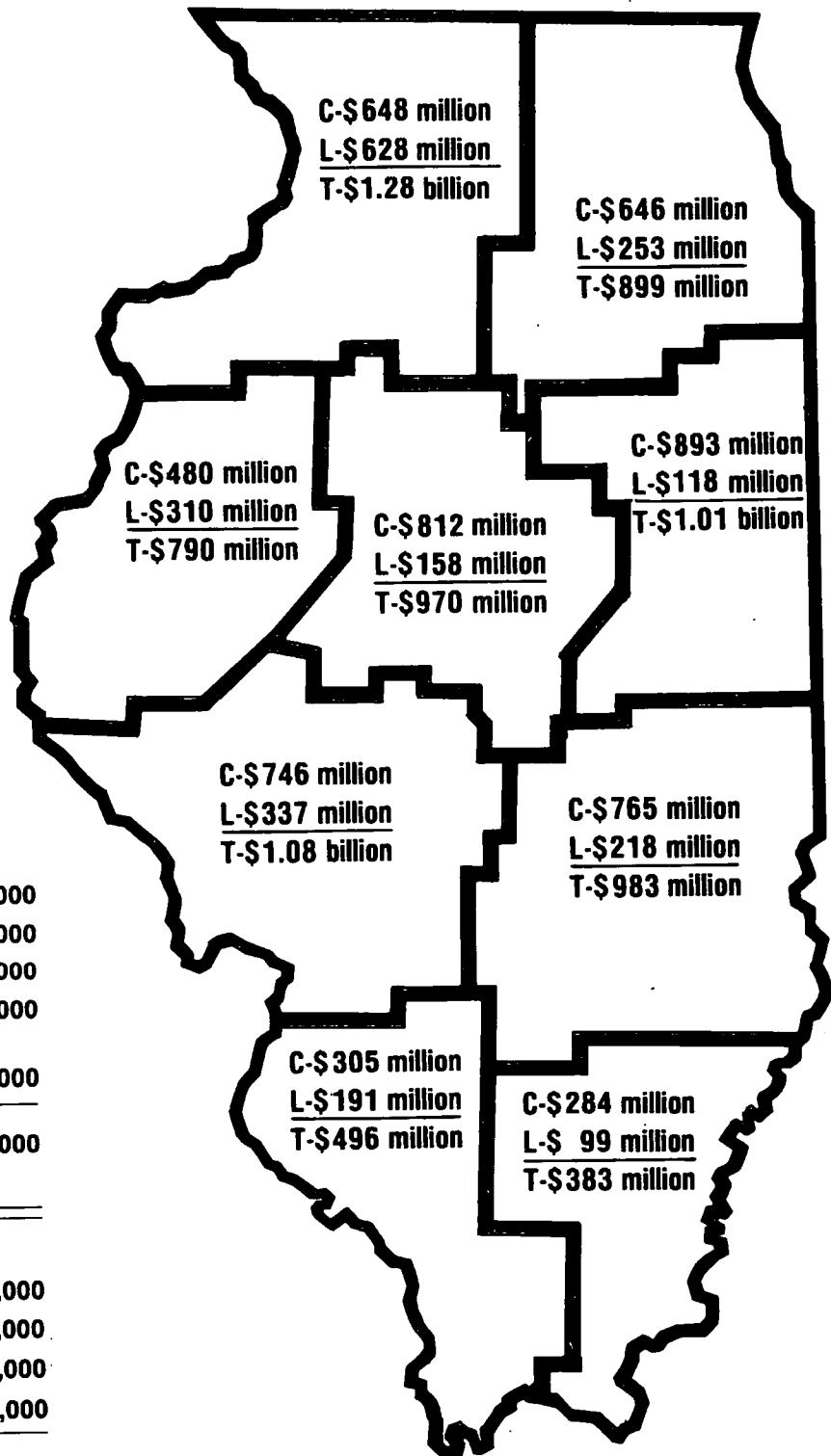
In a very real way what Illinois farmers produce each year has a direct impact on Illinois' economy and on the social and humanitarian goal of reducing hunger in the world. The goal of reducing world hunger, established by both the 1974 and 1976 World Food Conferences and the 1977 World Food and Nutrition Study, requires the combined efforts of food-production researchers everywhere.

A three-fold approach is needed to deal with the world-food issue: Population must be controlled; food production must be increased; and a more effective food distribution system must evolve. Throughout the nation and the world, there is recognition that increasing food production calls for expanded investments in agricultural research programs. Those programs, experts agree, and the resulting extension education programs have proved highly successful in the development of the U.S. agricultural industry today.

# Cash Receipts From Illinois Agricultural Commodities

**C-Crops** (cash receipts, all crops)  
**L-Livestock** (cash receipts, all livestock and livestock products)  
**T-Total** (cash receipts, all agricultural commodities)

(Calendar Year 1980, By Region)



## Cash Receipts From Illinois Agricultural Commodities (1980)

Cattle and Calves	\$ 874,000,000
Hogs	1,035,500,000
Eggs	55,500,000
Dairy Products	324,000,000
All Other Livestock & Livestock Products	23,000,000
<b>Total, Livestock &amp; Livestock Products</b>	<b>\$2,312,000,000</b>

Corn	\$2,714,000,000
Soybeans	2,384,000,000
Wheat	269,000,000
All Other Crops	212,000,000
<b>Total, All Crops</b>	<b>\$5,579,000,000</b>

<b>Total Cash Receipts, Crops and Livestock</b>	<b>\$7,891,000,000</b>
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Source: Illinois Cooperative Crop Reporting Service

### FOOD FOR CENTURY III: CURRENT AND PROJECTED RESEARCH NEEDS

The need for agricultural research in the State of Illinois has never been greater than it is now, nor have these problems been more urgent or complex:

- Severe losses in food-animal production systems caused by complex infectious and contagious diseases;
- Increased erosion related to the intensified production of row crops, often on marginal land;
- Financing farm operations in an age of high credit demands;
- The loss of prime farm land to urban sprawl;
- The conversion of marginal lands to crop and livestock production;
- Environmental problems stemming from the increased use of chemical fertilizers, herbicides, and pesticides;
- Declining supplies of energy and natural resources;
- The need for new management practices, operational methods, and equipment related to the rapidly increasing size of individual farms and livestock operations.

All of these problems and many more require attention now. Solutions are within the grasp of the modern researcher who has adequate facilities, equipment, and ready access to his fellow researchers in related fields. It is such an environment that the University must create for its researchers in the Colleges of Agriculture and Veterinary Medicine. Food for Century III is the mechanism that will make it happen.

With the strong support of all in Illinois who have a stake in improving agricultural productivity, the initial thrust of the Food for Century III program is well under way. In FY 1983 two major construction projects, the Veterinary Medicine Basic Sciences Building and the Agricultural Engineering Sciences Building, are scheduled for completion. A second thrust, focusing on research facilities for plant sciences, animal and dairy sciences, and veterinary medicine, will complete a "critical mass" of facilities needed to support an active and vital agricultural research program designed to increase food production in Illinois. The projects required to reach the "critical mass" of facilities are identified on Table 1.

Table 1  
FOOD FOR CENTURY III PROGRAM  
(FY 1984 Dollars)

Project Name/Priority	Total Cost	Requested In FY 1984	Requested In FY 1985	Requested In FY 1986
1. <u>Agricultural Engineering Research Laboratory</u>				
Remodeling	\$ 414,000	\$ 414,000		
Equipment	10,000	10,000		
(Project Subtotal)	(424,000)	(424,000)		
2. <u>Plant Sciences Greenhouses and Headhouse</u>				
Planning	650,000	650,000		
Construction	9,850,000		\$ 9,850,000	
Utilities	600,000		600,000	
Equipment	400,000			\$ 400,000
(Project Subtotal)	(11,500,000)	(650,000)	(10,450,000)	(400,000)
3. <u>Animal &amp; Dairy Science Facility</u>				
Planning	1,000,000	1,000,000		
Remodeling	7,600,000		7,600,000	
Construction	7,500,000		7,500,000	
Utilities	250,000		250,000	
Equipment	550,000			550,000
(Project Subtotal)	(16,900,000)	(1,000,000)	(15,350,000)	(550,000)
4. <u>Veterinary Medicine Animal Room Facilities</u>				
Construction	2,400,000	2,400,000		
Equipment	300,000		300,000	
(Project Subtotal)	(2,700,000)	(2,400,000)	(300,000)	
5. <u>Veterinary Medicine Research Farm Buildings</u>				
Remodeling	150,000	150,000		
Construction	600,000	600,000		
Equipment	50,000		50,000	
(Project Subtotal)	(800,000)	(750,000)	(50,000)	
6. <u>Land Acquisition</u>				
Southern Illinois Research Facility	600,000	600,000		
Agricultural-Veterinary Medicine at Urbana	300,000	300,000		
(Land Subtotal)	(900,000)	(900,000)		
7. <u>Swine Research Center</u>				
Construction	900,000	900,000		
Equipment	50,000		50,000	
(Project Subtotal)	(950,000)	(900,000)	(50,000)	
8. <u>Southern Illinois Research Facility</u>				
Construction	850,000		850,000	
Equipment	50,000			50,000
(Project Subtotal)	(900,000)		(850,000)	(50,000)
TOTAL COST	\$35,074,000	\$7,024,000	\$27,050,000	\$1,000,000



#### AGRICULTURAL RESEARCH PAYS DIVIDENDS

Speaking on the productivity of American agriculture, George Kenworth II, a scientific adviser to President Reagan, said, "Of course we can credit our abundant arable land and temperature climate for much of this success. But not to be overlooked is this country's historic interest and success in agricultural sciences and technology. This has been an investment of incredible payoff. However, we must recognize that it is an investment that must continue to meet ever changing conditions and demands."

He continued, "We must forge ahead in this work, and with efforts in international cooperation in agricultural R and D to build a solid base for world food security in the years and decades to come."

In November 1979, Science magazine reported annual rates of return on agricultural research expenditures to be "on the order of 50 percent." In the winter 1981 issue of National Forum, the Phi Kappa Phi journal, Nobel laureate Theodore W. Schultz, University of Chicago, is quoted as saying, "The future food supply depends in large measure on the achievements of agricultural research."

As documented above, there is wide agreement on the importance of investing in agricultural research. Due to its curricular and research missions, it is both appropriate and logical that the University of Illinois, in concert with the citizens of this key agricultural state, has developed its food research program--called Food for Century III--to meet the growing challenge of greater food production and improved human nutrition which ultimately will contribute to an improved quality of human life. At the same time, the program can lay the groundwork for future advances in production which are tied so directly to the Illinois economy. In addition, development of a food research program is consistent with Illinois State Statutes which assign responsibility for state-wide agricultural research and extension education programs to the University of Illinois.

The problems in meeting increased food production challenges are complex. Available production technology, existing natural resources, concerns for environmental quality, energy costs and supplies, population control, and the entire food processing and distribution system are inter-related factors. Those factors, coupled with national agricultural policies, all bear heavily on future developments.

The accelerating worldwide demand for food production--a four percent annual increase in some developing countries--also underlines the socio-economic necessity for expanded food and agricultural research during the remainder of this century.

#### FOOD FOR CENTURY III: PROGRESS TO DATE

In 1976, the University of Illinois proposed a food production research facilities modernization program aimed at strengthening the overall research and educational capabilities of the Colleges of Veterinary Medicine and Agriculture--Food for Century III. In proposing this positive action, the University recognized the well-established link between scientific research, technological innovation, and increased agricultural productivity.

Illinois citizens and state government officials have responded positively to both the Food for Century III program and its underlying concept. The proposal has been favorably reviewed by the Illinois Board of Higher Education, the Bureau of the Budget, and the Capital Development Board. Governor Thompson and the Illinois General Assembly have strongly endorsed and generously supported Food for Century III, appropriating more than \$40.8 million through FY 1982 to initiate this effort to continue Illinois' prominence in agricultural production.

For FY 1983 the Illinois General Assembly showed its continued support for the Food for Century III program by approving \$5,498,500 for six capital projects. The funding of these projects was designed to initiate a second phase of Food for Century III, concentrating on the development of advanced research facilities. However, Governor Thompson vetoed five of the six projects.

Adequate funding support for basic and applied agricultural research is essential to the future growth and productivity of our food-production system. Through realization of its capital development program for food-production research, the University of Illinois fully expects to build upon its rich heritage of service to the agricultural enterprise in Illinois, the nation, and society as a whole.

FOOD FOR CENTURY III PROJECTS FOR FY 1984

Each project in the FY 1984 request is described briefly and the research plans each project will facilitate are highlighted.

AGRICULTURAL ENGINEERING RESEARCH LABORATORY

Cost and Proposed Year of Funding:	Remodeling - \$414,000 (FY 1984)
	Equipment - \$ 10,000 (FY 1984)
	Total <u>\$424,000</u>

Estimated Date of Project Completion:	January 1985
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Project's Potential Impact:

The \$424,000 requested for remodeling and equipping the Agricultural Engineering Research Laboratory would allow this structure to function as supplementary facilities to the soon-to-be-completed Agricultural Engineering Sciences Building. The remodeled space would then allow facilities to properly house the Departments of Agricultural Engineering and Forestry. It would be less expensive to remodel this existing space than to construct an additional 8,000 NASF in the Agricultural Engineering Sciences Building. The Agricultural Engineering Research Laboratory is located in close proximity to other College of Agriculture facilities and allows its residents convenient access to other College faculty and staff, offices, classrooms, and research activities.

The project involves developing a structural testing floor for Agricultural Engineering research and space to accommodate the majority of the Wood Science Program in the Department of Forestry. The development of the wood testing area for the Department of Forestry consists of a wood shop and four laboratories, including two temperature- and humidity-controlled rooms and a dry kiln.

Installation of the necessary movable equipment will complete the project and provide, for the first time, the type of facilities that are necessary for an adequate research environment for the Structures program in Agricultural Engineering and for the Wood Science program in Forestry.

PLANT SCIENCES GREENHOUSES AND HEADHOUSE

Cost* and Proposed Year of Funding:	Planning	\$	650,000	(FY 1984)
	Construction		9,850,000	(FY 1985)
	Utilities		600,000	(FY 1985)
	Equipment		400,000	(FY 1986)
	Total		<u>\$11,500,000</u>	

Estimated Date for Project  
Completion:

January 1987

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\*FY 1984 dollars

Project's Potential Impact:

The modern greenhouse is much more than a plant-holding facility; it is the plant scientist's laboratory. Modern greenhouse facilities, with separate environmentally controlled areas, allow sophisticated research that ranges from genetic engineering to volatile disease control to progress side by side. In the College of Agriculture, greenhouses are used for research, graduate education, undergraduate instruction, and extension activities.

The present greenhouses, built in the early 1900's and proposed for replacement, are antiquated -- energy inefficient, lacking sophisticated controls, and structurally deteriorating.

The proposed greenhouses and headhouse would be a complex located adjacent to the existing Turner Hall greenhouses, allowing for greater operating efficiency and improved interchange among the user departments and programs. The completed structures will be energy efficient and include sophisticated computerized control systems necessary to carry out whole-plant research and allow experimentation with adequate plant populations. The modern greenhouse offers the opportunity to do plant science research every day of the year at a cost considerably less than the cost of plant research using growth chambers.

Plant science research carried out in greenhouses is both fundamental and applied in nature. Continued studies that extend the fundamental knowledge of genetics, physiology, and biochemistry at the cellular level to whole-plant systems are necessary. Greenhouses offer opportunities to study the whole plant under optimally controlled environmental conditions

of light quality, quantity and duration, temperature, humidity, and atmosphere components. It is also possible to control the rhizosphere (root environment) and nutrition needs of plants. These conditions cannot be met, studied, or controlled in our present facility. Facilities are needed for studies on energy utilization and conservation, intensive environmental research, rapid propagation from tissue culture, optimization of cropping systems, plant genetic engineering and breeding, whole plant physiology, and pesticide physiology if we are to adequately understand the basics of cell and plant growth so necessary to optimize crop yields.

Genetic engineering, for example, is really at the beginning of a revolution of understanding about how genes in higher organisms act. Although it is still impossible to assess the impact genetic engineering will have on agriculture, interest is high. A recent survey shows that 11 of 31 companies involved in genetic engineering are located in the Midwest.

Until recently, researchers could study only plants that can hybridize naturally -- species that are closely related. Researchers now have found ways to "transfer" beneficial genes with DNA from more distantly related species. The work in this area will, in part, focus on making use of wild relatives of cultivated plants. Such an approach already helps researchers incorporate resistance to diseases and insects into high-yielding cultivars.

Dreams of building a better plant are becoming reality. The media have recently reported about scientists inserting soybean genes into a sunflower. Illinois work with *Tripsacum*, a native grass distantly related to maize, is in its early stages. And other researchers have set sight on developing corn that has the ability to biologically fix atmospheric nitrogen, as soybeans and other legumes can.

Most of the plant science departments at the University of Illinois now conduct research that involves protoplast and tissue culture. New plant-growth facilities are needed to enable researchers to continue and expand these and other efforts.

A research team composed of plant pathologists and agricultural entomologists has finally found the cause of brittleroot, a disease that has periodically devastated the Illinois horseradish crop since the 1930s. Such progress awaited discovery of a new kind of disease-causing agent, a

Spiroplasma. This is a major advance toward discovering control measures for the disease, which is, of course, the payoff for Illinois farmers and growers.

A corn virus (maize dwarf mosaic) has been adequately controlled by breeding resistant genes into fieldcorn for the past decade. But recently, sweetcorn, which has little genetic resistance, has been seriously affected. A program is underway to incorporate such resistance into sweetcorn varieties.

Similarly, sources of genetic resistance are being sought to incorporate into numerous field, vegetable, ornamental, and forest crops. Work is underway to find microorganisms that can serve as biological agents to control soybean cyst nematodes. Intensive efforts are also underway against soybean mosaic virus, Poplar rust, corn leaf blights, tomato viruses, and others.

Modern greenhouse facilities will also be used to study and develop systems for controlled environment food production. At the present time, most of the midwestern and northeastern states rely on a relatively few western and southern states for their supply of directly consumed food. Illinois, for example, imports most of the vegetables and fruits consumed as well as the flowers and landscape plants that improve the quality of our living environment. As food transportation costs continue to climb, the State's competitive advantage for local food production improves. Illinois has the population and resources to be self-sufficient in food production and even to be a regional exporter of high-income horticultural crops.

Controlled environment agricultural food production is not new. However, much research still is needed to understand and develop cropping systems to optimize production for yields many times that of field production on an annual basis.

The FY 1984 request calls for the planning of the greenhouses and headhouse construction in a single year. Construction is proposed to begin during FY 1985. \$650,000 is required to fund the planning activities.

ANIMAL AND DAIRY SCIENCE FACILITY

Cost* and Proposed Year of Funding:	Planning	\$ 1,000,000	(FY 1984)
	Remodeling	7,600,000	(FY 1985)
	Construction	7,500,000	(FY 1985)
	Utilities	250,000	(FY 1985)
	Equipment	550,000	(FY 1986)
	Total	\$16,900,000	

Estimated Date for Project  
Completion:

September 1986

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\*FY 1984 dollars

Project's Potential Impact:

The Animal Agriculture Program in the College of Agriculture has been scattered about in a half-dozen campus buildings for many years. The long-range plan has been to consolidate the facilities for that program on the south campus within easy reach of related facilities existing on the research farm space south of campus. The purpose of the consolidation is to facilitate interdisciplinary and multidisciplinary research efforts. The remodeling of the Meat Science Laboratory (within 100 yards of the proposed Animal and Dairy Science Facility) represented the initial step in the consolidation process. The completion of this project will represent the final step in that process.

The project will involve remodeling the existing Veterinary Medicine Building (to be vacated in September 1982) to provide mainly offices and instructional and research laboratories for the two departments that will occupy the space. The Veterinary Medicine Building will not accommodate both units in their entirety; therefore, a new addition is being proposed. The addition will include the most sophisticated research space in the complex and will also include laboratory animal space that will enable researchers to work on research programs such as these:

--In microbiology, a team is developing a system of predicting the performance of ruminants based on diet composition -- a task made difficult because feedstuffs are first subjected to rumen fermentation.

--Another team is developing methods for predicting the adverse effects of various mycotoxins, nitrosamines, nitrites, and other agents. Their work may help clarify the structural features leading to toxicity and carcinogenicity.

--One group is studying the use of grass clippings as a new feed ingredient to contribute to the efficiency of animal agriculture -- particularly poultry.

--Still another group is studying ways to improve the bioavailability of several B-vitamins, lysine, and the sulfur-containing amino acids.

--A group of dairy scientists are developing a method using electrical conductivity to monitor cows infected with mastitis.

--Another team is developing procedures for increasing the number of female gametes from desirable cows and transplanting them in less desirable cows.

In addition, work in rumen physiology, animal waste management, and other areas of microbiology and management are underway. Most of the work benefits from an interdisciplinary approach will be made workable by the consolidation of facilities.

Planning for the project is proposed for FY 1984 at a cost of \$1,000,000. Remodeling of the existing facility, construction of the addition, and necessary utilities work are scheduled to begin in the following year. An equipment request planned for FY 1986 will complete the project appropriations. The total cost of the project in FY 1984 dollars is \$16,900,000.

#### VETERINARY MEDICINE ANIMAL ROOM FACILITIES

Cost* and Proposed Year of Funding:	Construction	\$2,400,000	(FY 1984)
	Equipment	300,000	(FY 1985)
	Total	\$2,700,000	

Estimated Date for Project  
Completion:

April 1985

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\*FY 1984 dollars



Project's Potential Impact:

Construction of the new Basic Sciences Building for the College of Veterinary Medicine will bring on line the first major project in the University's Food for Century III program. The College's first 30 years were spent developing teaching and service programs to help meet the nation's critical shortage of veterinarians. When the new Basic Sciences Building is completed, the College's new teaching facilities will accommodate projected increases in the entering freshman class. Enrollments are expected to increase when the space is occupied and the necessary operating resources are provided. When the College moves into the Basic Sciences Building, modern laboratory space will be provided for researchers in the College's pathobiology and biosciences departments; however, construction of animal room facilities will still be required.

When campus planners started working on Food for Century III, the University of Illinois' veterinary research facilities ranked near the bottom of American veterinary facilities. Laboratory space in the new Basic Sciences Building and renovation of the College's research farm will move the College into a competitive position with the nation's other colleges of veterinary medicine. The proposed animal room facilities in the new Basic Sciences Building and the ruminant research facility on the Veterinary Medicine Research Farm will provide the College with laboratory and animal facilities equal to any in the nation.

In recent years, colleges of veterinary medicine have gained research support nationally through federal disease research programs. With the support of livestock commodity groups, this emphasis on animal disease research by the USDA will continue in coming years. There is no valid reason to continue to accept a 20-percent death loss in pigs and sheep from birth to weaning or less than a 90-percent calf crop. The 1980 Boyne Mountain Animal Agriculture Conference cited the immediate need for expanded efforts in animal disease research so that animal agriculture will be in a position to effectively serve human nutritional needs in the twenty-first century.

Several members of the College's pathobiology department are involved with research on blood diseases occurring in the tropical regions of the world. Much of the future growth in world livestock production is likely

to occur in the tropical and subtropical belts of the world if the major diseases affecting livestock there can be brought under control.

University of Illinois researchers, supported by funds from the Rockefeller Foundation, USAID, and large, multinational corporations -- and working in several Latin American nations -- are developing vaccines for these blood diseases. Although generally limited to warmer climates, one of the diseases the group has worked with -- anaplasmosis -- is indigenous to many U.S. livestock areas.

Foreign animal diseases in a modern environment are a constant threat to the livestock industry of this country. Although the work of these veterinary researchers is having its most immediate impact on world livestock numbers, the information gained and the vaccines developed also provide a line of defense for Illinois livestock producers.

Current facilities in the College severely limit infectious disease research, but the new laboratories under construction and the proposed animal rooms will improve infectious disease research capabilities. Members of the pathobiology department, as well as a number of recently recruited researchers, are developing projects or conducting immunological and virological studies on long-term or latent infectious diseases of food animals including pseudorabies (PRV), TGE, and eperythrozoonosis (EPE) in swine; leukosis in poultry; cancer eye and pink eye in cattle; and leptospirosis in all species. Already veterinary researchers have developed a diagnostic test for EPE, bacterins or vaccines for leptospirosis and TGE, and an effective test that is being used in the State Diagnostic Laboratories for the diagnosis of PRV.

The area to be finished in the Basic Sciences Building will not only provide animal facilities to enhance disease, parasitic and metabolic studies, but it will also provide gnotobiotic or germ-free facilities for swine researchers. Already these researchers have provided clear information that swine dysentery is caused by several infectious agents working in concert and not by a single causative agent. Work on an effective vaccine for the costly disease has been turned over to commercial firms. Other important diseases of livestock must also be studied using germ-free techniques.

During the last five years, members of the College's biosciences department have established one of the foremost animal toxicology programs in the nation. As an offshoot of their research, these staff members established the nation's first animal Toxicology Hotline Service and expect to receive a large federal grant in the near future to dovetail these activities with a feed specimen bank. The director of the service estimates they were involved in poisoning cases affecting \$40 million worth of animal loss in 1980. By the midpoint of this year, they have already exceeded last year's case load. Many of the cases handled by the toxicology group are feed-related and involve the accidental misuse or misapplication of agricultural chemicals. The toxicology group is another segment of the veterinary faculty that anticipates the completion of the Basic Sciences Building, for it will provide modern laboratory space, storage space for a feed specimen banking program, and a modern analytical chemistry facility in the new diagnostic laboratory for their use.

Over 12,000 assignable square feet of unfinished space will be completed as sophisticated disease research laboratory space. \$2,400,000 is needed for all construction-related activities. An additional request of \$300,000 (FY 1984 dollars) will be proposed for FY 1985 to fully equip the laboratories.

#### VETERINARY MEDICINE RESEARCH FARM BUILDINGS

Cost* and Proposed Year of Funding:	Remodeling	\$150,000	(FY 1984)
	Construction	600,000	(FY 1984)
	Equipment	50,000	(FY 1985)
	Total	<u>\$800,000</u>	

Estimated Date of Project  
Completion:

September 1984

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\*FY 1984 dollars

#### Project's Potential Impact:

The funds requested for veterinary medicine research farm buildings would complete the South Race Street research facility. When the Colleges of Agriculture and Veterinary Medicine initiated the Food for Century III

program, the Veterinary Medicine Research Farm typified the College of Veterinary Medicine's research facilities. Many small buildings that had existed on the farm before it became a research facility were gerrymandered into makeshift animal holding facilities, research laboratories, and isolation facilities. Few, if any, of the facilities could meet national standards for laboratory animal or research facilities.

When the Food for Century III program was getting underway, a veterinary pharmacologist was conducting research on drug effectiveness and sulfa residues in swine that gained national attention. The work not only examined the basic actions of the drugs, but also led to some practical research that offered farmers ways to avoid residue problems in their operations. That research involving hundreds of thousands of dollars of federal research money was conducted in inadequate facilities on the farm. Researchers on the veterinary farm now have swine facilities, as a result of Food for Century III, comparable to those used in modern swine finishing operations. Those facilities are being used for larger scale drug, metabolic, and reproductive studies than were ever possible in the College before. Results of the drug residue studies enabled the FDA, USDA, and the swine industry to eliminate sources of drug residues in the U.S. red meat supply. In addition to the swine farrowing and finishing units already in operation, a swine gestation building, more laboratory and animal holding space, and a small ruminant facility are nearing completion. College researchers will have a modern set of swine confinement facilities in which to conduct research that should be meaningful to the modern producer.

Paralleling the expansion of swine research facilities at the College of Veterinary Medicine has been an expansion in research support and projects among College researchers. Between 1975 and 1981, research support at the College grew from \$1.36 million to \$2.13 million. Seventy-one research projects were underway in 1976. Five years later, the number was 180 and 85 percent of the College's research effort was either on food animals or on projects that cut across all species lines and, in some cases, even impacted on the improvement of human health.

Scheduled as a part of the FY 1984 project is a ruminant disease research facility. Researchers in the College's biosciences and clinical departments are attempting to improve cattle, sheep, and goat reproductive

efficiency with their studies. Now they are severely hampered by woefully inadequate facilities that endanger both researchers and animals and are unprotected from the weather. When the cattle facilities are complete, reproductive studies should blossom just as the drug studies in the swine facilities did. Reproductive studies in the College have investigated the physiology of farrowing in swine, the function of the ovaries with an eye towards improving fertility, the body mechanisms that regulate normal birth and the estrous cycle in cattle. Veterinary researchers are examining the effect of photoperiod on the estrous cycle in sheep. The ability to control these physiologic mechanisms would enable producers to selectively breed sheep year round rather than relying on seasonal breeding.

Researchers in the College have also contributed to an understanding of the effect of stress on reproductive performance of cattle and sheep in confinement. However, without the planned ruminant facilities, researchers say it is nearly impossible to complete the studies. Unless animals can be studied in duplicate situations that are environmentally comfortable for the animals, it is impossible to manipulate stress factors satisfactorily. Animals that must be captured in the farm pastures for each experiment cannot be monitored satisfactorily and do not make suitable models for this type of research.

The College's reproductive researchers are currently seeking funding for physiology studies of the post-calving cow. Facilities that will protect and confine the cows while sophisticated metabolic sampling is conducted are unavailable. Upon completion of the ruminant research facility, researchers would be able to work with statistically significant numbers of animals instead of completing work on a piecemeal basis.

The new ruminant facility would also enhance the College's active equine reproductive research program and would be used for cattle research on respiratory, metabolic, and parasitic diseases.

While a number of the small farm buildings are scheduled to be razed, others would be remodeled with a portion of the project funds. This work would upgrade substandard space by adding insulation, heating, and even water to some buildings. Animal facilities would be improved and lockers and lavatories provided. Other funds would be used to construct a storage building and a machine shop to service the research facilities. Currently,

farm equipment is exposed to the weather year round and deteriorates rapidly. The storage area would protect machinery, trucks, hay straw, feed, and other supplies, while the machine shop would be used to maintain or construct research and farm equipment.

#### LAND ACQUISITION

##### Southern Illinois Research Facility

###### Project's Potential Impact:

The Colleges of Agriculture and Veterinary Medicine need research lands in southern Illinois. At present, the University of Illinois uses research lands at the Dixon Springs Agricultural Center through a use permit from the U.S. Forest Service, but State funds cannot be used for new construction or remodeling on these lands.

The College of Agriculture estimates it will cost \$600,000 to acquire the necessary Southern Illinois land for the continuation of animal research activities, expansion of forestry research, and the maintenance of agronomic and horticultural work. This project may be revised in the event the University succeeds in acquiring the required property prior to FY 1984 through a land transfer with the Federal government.

##### Agriculture-Veterinary Medicine at Urbana

###### Project's Potential Impact:

In FY 1978, the University requested \$1,000,000 to purchase a tract of just more than 200 acres of suitable land adjacent to the present research farms for meeting its short-range agricultural needs. When the funds were reduced to \$400,000, a smaller acreage at an alternate location had to be purchased. The College of Agriculture is presently utilizing all of its available land for research needs in the Urbana-Champaign area. The problem has been compounded by the fact that the College of Veterinary Medicine moved its facilities to the south farms, and now occupies a number of acres previously used for agricultural research.

To meet present and near future research land needs, the College of Agriculture must acquire additional adjacent lands. The cost of these lands has been estimated at \$300,000. Funding is being requested for FY 1984.

SWINE RESEARCH CENTER

Cost* and Proposed Year of Funding:	Construction	\$900,000	(FY 1984)
	Equipment	50,000	(FY 1985)
	Total	<u>\$950,000</u>	

Estimated Date for Project  
Completion:

December 1985

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\*FY 1984 dollars

Project's Potential Impact

Illinois ranks second in swine production in the United States; swine account for 16 to 18% of the income generated on Illinois farms. The swine research group in the Department of Animal Science is looked to by the more than 30,000 swine producers in the state as the primary source of basic and applied research information to support the development of this rapidly changing industry. Yet, data on finishing pigs is being derived from experiments conducted in a solid-floor structure constructed in the 1920's -- data that is to be applied to management decisions for pigs housed in environmentally regulated, slotted floor units.

Current projects in vitamin nutrition are consistently confounded because pigs in the U. of I. facility have access to their own feces, a potent source of most B-vitamins, while pigs on Illinois swine farms are separated from their fecal material by the use of slotted floors.

Funds appropriated in the FY 1980 Food for Century III program have provided for a modern nursery, growing and very limited finishing space. The additional finishing unit requested is essential 1) to the completion of the Swine Research Center project and 2) to any research program that involves studies with pigs from weaning until market weight.

The project is planned for completion by December 1985. Construction is scheduled for FY 1984 at a cost of \$900,000. An equipment proposal of \$50,000 will be requested for FY 1985.