

INSTITUTE FOR PUBLIC POLICY AND BUSINESS RESEARCH
THE UNIVERSITY OF KANSAS

ASSESSMENT OF THE UNIVERSITY OF KANSAS
SCIENCE AND ENGINEERING INFRASTRUCTURE:
IDENTIFICATION OF WEAKNESSES
AND BARRIERS TO RESEARCH

prepared for

Kansas NSF EPSCoR Planning Grant
Ted Kuwana, Principal Investigator and
Regents Distinguished Professor

by

Steven Maynard-Moody
Associate Professor of Public Administration/Government

M. Elizabeth Stella
Associate Scientist

Don Stull
Professor of Anthropology

Anthony L. Redwood
Executive Director

March 1992

Report No. 194

Table of Contents

Acknowledgements	iii
Preface	iv
Executive Summary	vii
Introduction	1
Status of Science and Engineering Research	1
Barriers and Accomplishments	14
Conclusions	23
List of Appendices	24

Acknowledgements

This research was funded by the Planning Grant for EPSCoR (NSF Experimental Program to Stimulate Competitive Research) as part of the assessment of the science and engineering infrastructure at Kansas' three doctoral granting institutions: the University of Kansas, Kansas State University, and Wichita State University.

We wish to thank those science and engineering faculty, staff, department chairs, deans, and administrators for allowing us to interview them. We also wish to thank those in Research Support and Grants Administration, especially Robert Bearse, Kim Moreland, Joanne Altieri, and Kevin Reed who provided access to and interpretation of grant data. We also thank Virginia Nichols in the Office of Institutional Research and Planning for faculty demographic data.

Special thanks to Marisa Kelly, who assisted with the analysis of interview data; and to Mary Brohammer whose compilation of this report contributed greatly to its quality.

A copy of the complete report may be obtained from the Institute for Public Policy and Business Research, 607 Blake Hall, University of Kansas, Lawrence, Kansas 66045.

Preface

Sixteen states and the Commonwealth of Puerto Rico have been funded by NSF for periods of three or more years during the 1980's in the NSF Experimental Program to Stimulate Competitive Research (EPSCoR). In 1991, Kansas and Nebraska were declared the 17th and 18th states eligible to participate in EPSCoR. Kansas applied for and was awarded an EPSCoR Planning Grant by NSF during the summer of 1991. As part of this planning, NSF predicated that an assessment be conducted of the participating universities to determine the barriers which were impeding Kansas' competitiveness for federal R&D dollars, specifically in the areas of science and engineering (S&E). This report therefore identifies barriers, and wherever possible, the impact of those barriers to the competitiveness of the University of Kansas (KU) with respect to research and its funding. Similar studies have been conducted at Kansas State University (KSU) and Wichita State University (WSU) and are reported under separate cover.

We believe that it is important for the readers of this report to understanding the data base that provides the rationale for Kansas being eligible for EPSCoR. In 1989, Kansas ranked 33rd (17th from the bottom!) among the states in federal research and development support. It received less than one-half of one percent of all federal R&D expenditures to colleges and universities. Furthermore, while federal R&D support of colleges and universities rose by 450% between 1971 and 1989, the figure for Kansas institutions was only 250%. In the R&D race, our state was (and is) steadily losing ground.

EPSCoR's goal is to bring S&E research endeavors in EPSCoR states to nationally competitive levels. It is a model for building the nation's S&E infrastructure. It is a stimulus for change. It is an opportunity for Kansas to broaden the base of R&D capability, to enhance the capacity and to bring about permanent, systemic changes in how it conducts research.

As already noted, Kansas has fared poorly in the race for research and development funds from federal and industrial sources during the last two decades. NSF data indicate that in 1989 the top 10 states received an annual per capita average of \$45 in R&D funds. The U.S. average is \$36, while EPSCoR states and Kansas average \$16 per capita. What about our competitiveness with surrounding states and institutions?

Table 1 shows that federal R&D dollars to Kansas universities and colleges increased from \$24.7 million in 1982 to \$39.1 million in 1989. This is an increase of 58% whereas the neighboring states of Colorado, Iowa, Missouri and Nebraska increased by 91%, 115%, 86% and 76%, respectively. On a per capita basis for 1989, we, like Oklahoma, simply are not competing for a fair share of the federal R&D research dollars.

State	1982 to 1989 (in thousands)	% Change	1990 Census (in thousands)	\$ Per Capita 1989
Colorado	77,139 — 147,301	91	3,308	44.5
Iowa	47,898 — 103,214	115	2,787	37.0
Kansas	24,678 — 39,105	58	2,486	15.7
Missouri	80,978 — 150,269	86	5,138	29.2
Nebraska	15,572 — 27,462	76	1,585	17.3
Oklahoma	22,795 — 30,968	36	3,1589.8	

Source NSF: Selected Data on Federal Support to Universities & Colleges FY 89 NSF 91-316.

Table 2 summarizes the total federal R&D funds in 1989 to KU, KSU and WSU compared to several institutions of our neighboring states (1989 is NSF's latest data base). The data are rather self-explanatory.

Institution	Total \$* (rank)	Federal R&D \$ (rank)	Engineering \$*	Phys Sci. \$*	Math/ Comp. Sci. \$*
U. of Colorado	143,694 (28)	130,430 (20)	15,613	21,121	3,950
U. of Iowa	105,900 (46)	94,237 (31)	8,710	13,114	1,986
Iowa State U.	103,174 (49)	54,627 (71)	25,225	4,276	8,603
U. of Nebraska	68,281 (74)	a	7,253	4,861	1,103
Colorado State U.	64,351 (79)	51,652 (75)	13,853	4,832	915
U. of Kansas	57,111 (83)	37,118 (97)	3,728	5,710	621
U. of Oklahoma	53,956 (90)	a	8,529	5,276	1,512
Kansas State U.	47,302 (99)	a	4,651	3,841	508
Wichita State U.	3,443	1,921	no data	no data	no data

* Includes federal and non-federal dollars for S&E. a. Not in top 100.
Source NSF: Academic Science/Engineering R&D Expenditures, FY 89, NSF 90-321.

Finally, there is a general perception that perhaps EPSCoR states do not support nor invest in their institutional S&E research. NSF data for 1989 suggest otherwise. That is, the average academic R&D expenditures is \$18 per capita from *state and institutional sources* for the top ten states compared to an average of \$15 per capita for EPSCoR states. The larger discrepancy occurs with the academic R&D expenditures from *federal and industrial sources*; the U.S. average is \$36 per capita, whereas the top ten states average \$45 compared to \$16 for EPSCoR states.

In the context of the above background, we respectfully submit this report on the assessment of barriers that KU needs to consider in order to address our quest to become more research competitive.

Executive Summary

Introduction

Describing the status of Science and Engineering (S&E) research and infrastructure at the University of Kansas requires consideration of the capacity to conduct research as well as the culture that supports and encourages research. The university's science and engineering programs have many strengths and several areas that have maintained excellence. The purpose of this study, however, is to identify and assess weaknesses, problems, and barriers. This report describes the current status of funded research at the University of Kansas and then summarizes state, university, and departmental barriers to conducting funded research identified by faculty and administrators. This study is part of the planning phase of the NSF Experimental Program to Stimulate Competitive Research (EPSCoR), and is limited to departments that could compete for NSF funding. It does not include those parts of the University where funding comes largely from other sources (e.g. NIH). Thus, for the most part, the Medical Center is not included in this analysis.¹

Status of Science and Engineering Research

The University of Kansas, Lawrence Campus, has 414 science² and engineering faculty. Analysis of external funding for S&E research and educational services revealed that, when corrected for inflation, funding trends are relatively flat (1986-1991). Although funding of research projects in 1991 increased slightly over 1990 levels, support for educational services (i.e., training grants) continued to decline. Awards for research accounted for 85% of the total awards for the period reported. Analysis of funding distribution by general fields or disciplines showed that some relatively small groups of faculty, such as Pharmacy with 23 faculty, provide proportionally large shares of total S&E funding. This suggests that some groups may have an opportunity to increase their funding capacity.

Funding to the University of Kansas (Lawrence Campus) from NSF accounted for nearly 13% of the S&E external funds received from all sources for the six years examined. NSF funding levels were very stable from 1986 through 1990. The number of NSF grants submitted rose in the mid-1980s, but leveled off in the last four years. Despite the increase in proposals, the number of funded

¹NIH is the primary federal funding source for health related research. In FY 1990, the state of Kansas ranked thirty-fourth in total NIH funding and thirty-sixth in funding per capita.

²This group includes faculty in microbiology, biological sciences, anthropology, chemistry, economics, geography, geology, human development and family life, mathematics, physics and astronomy, psychology, sociology, computer science, pharmaceutical chemistry, pharmacology, and medicinal chemistry.

grants and the total dollars awarded has remained relatively constant. The decrease in the proportion of grants funded reflects increased competition for federal funds and perhaps an inability of KU's S&E faculty to compete. In addition, only 1.29% of NSF awards at KU were \$500,000 or larger. KU is not attracting the large program projects.

Twenty-four of the 93 faculty (26%) who have submitted NSF proposals in the past six years are responsible for 66.26% of the total NSF dollars awarded at KU. Loss of any of these faculty would have a serious impact on the institution's NSF funding capacity. More mentoring of young faculty, more "in house" peer review of grant applications, and development of program projects needs to occur to increase the pool of faculty receiving NSF awards.

To summarize, analysis of external funding of S&E research revealed that:

- * External funding for S&E research and educational activities peaked in 1989. When corrected for inflation, funding trends have been stable, neither grew nor declined.
- * Further analysis is needed to determine why award levels are small in some areas, such as social and computer science, and what can be done to increase levels of external funding.
- * Given the increased competition for limited funds, the number of proposals submitted, and perhaps more importantly, resubmitted to NSF should be increased.
- * NSF funding at KU is generally restricted to single investigator awards which limit size of awards. To significantly increase funding, more program projects must be obtained.
- * Given that a few faculty have obtained the majority of KU's NSF funds, every effort should be made to increase the pool of faculty with large bases of funded research.
- * More educational services projects should be developed and submitted to increase levels of external sources of funding for graduate education.

Assessment of Science and Engineering Research

An assessment study has revealed several barriers to research. In addition to analysis of NSF and institutional databases, 32 science and engineering faculty, staff and administrators were interviewed. A synopsis follows.

Salaries and Incentives

Faculty salaries are below national and peer institution averages, so recruitment and retention are difficult. For example, KU full professors received \$5,678 below the average of the peer institutions of Iowa, Colorado, Oklahoma, North Carolina and Oregon in 1991.

Graduate student recruitment is also hampered by non-competitive support and absence of tuition reductions.

Incentives for funded research vary. Some departments reward publications but not antecedent efforts, such as proposal writing. Thus, researchers who can produce results with little or no external funding rationally bypass grant-writing. Grant activity tends to stem from individual initiative, not institutional imperative.

Research Support

Grant success needs to be rewarded. Seed money will encourage future efforts and help support programs between grants. Increased resources are required to strengthen the research infrastructure. Limited equipment money often provides only start-up for new faculty, leaving inadequate resources to repair, replace and update equipment. Many faculty fall victim to a vicious circle: they need equipment to be competitive, but the granting agencies often do not fund equipment. In addition, state procedures need to be streamlined to facilitate equipment purchases.

Grant Development

Competition for research funds has heightened. Without early success or sustained funding, young researchers give up and older ones give out. In addition, departments with limited experience in funded research can't offer even a basic level of support for grant development and administration. This perpetuates the cycle of non-funding.

Getting a first grant or sustaining an established research program requires institutional support. Successful universities minimize the efforts expended by scientists on the routine aspects of grant writing. Kansas University should provide better support, especially for faculty not served by existing institutes on campus.

Informal networks surround funding agencies, and experienced grantpersons recognize the importance of informally gathered information for proposal writing. Respondents urged more direct contact between researchers and funders, not just sending administrative representatives to Washington. Established researchers should introduce junior colleagues to funders, and the university should support such travel. (The university does not underwrite travel and other expenses at the pre-proposal stage.)

Institutional Culture

S&E faculty recognize that graduate education is the foundation of successful research programs. Departments that have increased the number and quality of their graduate students also have increased their research activity. In general, however, Kansas University has not kept up with changing trends in the scientific enterprise. Except for centers, few research labs have the critical mass of faculty needed to form teams that focus research efforts and attract funding for program projects.

The result, in the words of a faculty member, is that departments don't "think big." Researchers rarely team with others outside their departments to attract the programmatic grants that are often beyond the reach of a single department. Top university administrators need to exercise leadership in this area.

Conclusions

From consideration of these barriers we deduced several major needs crucial to enlarging the S&E research enterprise and to increasing its external funding.

- * Provide administrative leadership that projects a vision for building competitive S&E, including large programmatic grants.
- * Implement systems of incentives, support and rewards to prioritize research. Make grant activity an institutional imperative, not just an expression of individual entrepreneurship.
- * Acquire state-of-the-art equipment and increase operating/maintenance support. Remove barriers that hamper purchase of research equipment.
- * Increase the emphasis on doctoral education and provide competitive stipends for graduate students as a means of driving the basic research mission of the university.
- * Increase the number of S&E faculty and faculty salary competitiveness.
- * Provide more seed money and travel support. Improve services to minimize the routine work researchers must perform to obtain grants. Ensure early notice of RFPs.

By highlighting the barriers and promoting understanding of the infrastructure needs, this study has already initiated some changes.

Introduction

Describing the status of Science and Engineering (S&E) research and infrastructure at the University of Kansas requires consideration of the capacity to conduct research as well as the culture that supports and encourages research. The university's science and engineering programs have many strengths and several areas that have maintained excellence. The purpose of this study, however, is to identify and assess weaknesses, problems, and barriers. This report describes the current status of funded research at the University of Kansas and then summarizes state, university, and departmental barriers to conducting funded research identified by faculty and administrators. This study is part of the planning phase of the NSF Experimental Program to Stimulate Competitive Research (EPSCoR), and is limited to departments that could compete for NSF funding. It does not include those parts of the University where funding comes largely from other sources (e.g. NIH). Thus, for the most part, the Medical Center is not included in this analysis.¹

Status of Science and Engineering Research

We assessed the level of S&E (Science and Engineering) research productivity to provide a baseline for future evaluation and to determine how Kansas's science and engineering faculty compete for external funds, particularly NSF funds. Kansas is in competition with a limited number of states for EPSCoR's Advanced Development funds. Kansas is not currently funded by EPSCoR. We have not assessed the level of S&E research productivity in the context of EPSCoR before, so it is difficult or impossible to address all areas of infrastructure in great detail. The following areas will be addressed:

- * Human Resource Development including number of active S&E faculty, postdoctoral associates, graduate students, and support personnel;
- * Institutional Research Priorities including available facilities, faculty size, and salaries;
- * Knowledge Transfer including linkages among state institutions and major research institutions and industry;
- * Research Support including ratio of federal to state and local research spending and the level of state and local support of S&E research; and
- * Level of S&E Research Productivity including grants received and degrees granted.

¹NIH is the primary federal funding source for health related research. In FY 1990, the state of Kansas ranked thirty-fourth in total NIH funding and thirty-sixth in funding per capita.

Human Resource Development

S&E Personnel.

The University of Kansas, Lawrence Campus, has 414 science² and engineering faculty (Table 1). Of those faculty 316 or 76.33% are tenured. Very few S&E faculty are under 30 years of age, which is not too surprising given the amount of time required to earn a Ph.D. and perhaps do postdoctoral work. The largest portion of faculty fall into the 40-49 age group (see Appendix, Table 1 for more detail).

In addition to faculty, 76 academic staff contribute to S&E productivity (Table 1). Included in this category are museum curators and scientists (senior, associate, assistant). The scientist designation is equivalent to a faculty position. Over 200 other staff hold professional positions that contribute to the teaching and research capacity by serving as lab and program directors, program assistants, administrative assistants, and research associates/assistants/aides. Forty-five postdoctoral positions exist in the sciences, but engineering has none. Overall, there are more graduate teaching assistants (GTA = 427) than student research assistants (SRA = 380). Technical support (i.e., laboratory staff, repair technicians, graphic designers, etc.) is provided by 66 staff.

Clerical and accounting services are provided by 143 support staff. These people assist faculty and other staff with preparation of teaching materials, grant applications, grant progress reports, publications, paper presentations, grant management, purchasing, and administrative reports.

Table 2 shows the percentage of the total faculty qualified to be graduate faculty. Over the five year period examined, 75% or more of the total faculty served on the graduate faculty. This provides a measure of the number of faculty who met certain standards for scholarly activity (e.g., a record of publication in refereed journals).

Institutional Research Priorities

Available Facilities. According to the 1990 University of Kansas Profile, space available for organized research at the university's Lawrence campus totaled 459,616 square feet or 10.2% of the total space. Since 1986, space assignable to organized research has increased by 6.5%. However, nonclass lab space (research labs) net assignable square feet fell from 345,097 (10.3% of total) in 1989 to 335,813 (9.7%) in 1990. Construction of a

²This group includes faculty in microbiology, biological sciences, anthropology, chemistry, economics, geography, geology, human development and family life, mathematics, physics and astronomy, psychology, sociology, computer science, pharmaceutical chemistry, pharmacology, and medicinal chemistry.

TABLE 1

KU S&E Faculty/Staff Demographic Data: Fall, 1991

GROUP	Number of Faculty		Percent of Total Faculty by Age					Number of Other Staff by Type*							TOTAL			
	Tenured	Total	20-29	30-39	40-49	50-59	60+	A	P	Pdoc	GTA	SRA	Tech	Sub Total		Sub	SAsst/ Hrly	Sub Total
SCIENCE**	253	330	2.12%	21.52%	33.33%	26.97%	16.06%	72	225	45	384	351	56	1133	120	402	522	1985
ENGINEERING	63	84	1.22%	30.02%	39.68%	30.08%	27.57%	4	13	0	43	29	10	99	23	58	81	264
S&E TOTAL	316	414	1.93%	21.50%	32.37%	26.33%	17.87%	76	238	45	427	380	66	1232	143	460	603	2249

* A = Academic: includes museum curators, senior scientists, associate scientists, assistant scientists.

P = Professional: includes lab directors, institute/program directors, program assistants, administrative assistants system specialists, research associates, research assistants, research aides.

Pdoc = Postdoctoral fellows and associates.

GTA = Graduate teaching assistants.

Tech = Technical: includes laboratory staff, computer operations specialists, general maintenance repair technicians, graphic designers, media production etc.

SRA = Student research assistant.

Supp = Support (classified) staff: includes office assistants, accountants, storekeepers, keyboard operators secretaries, etc.

SAsst/Hrly = Student assistants, student hourly.

** In addition to academic departments, this group includes Academic Computing Center, science museums, Labs (e.g., NMR Lab), and Institutes (e.g., Bureau of Child Research). Libraries are not included.

Source: Office of Institutional Research and Planning, 1991.

TABLE 2

Graduate Faculty Headcount: Lawrence Campus

Year	Graduate	Total	% Graduate
1986-87	965	1,232	78.33%
1987-88	936	1,245	75.18%
1988-89	930	1,240	75.00%
1989-90	959	1,227	78.16%
1990-91	953	1,257	75.82%

Source: Office of Research, Graduate Studies, & Public Service

bioscience research center (22,000 square feet; \$5,200,000) is in the planning phase.

We were not able to conduct a formal inventory of research equipment. However, our survey of faculty reported in the next section, addresses equipment needs.

Faculty Salaries and Size. To determine the state's financial commitment to maintaining competitive levels of faculty salaries, average salaries were compared with peer institutions. Table 3 shows that professors' salaries showed the greatest gap, being \$7,844 below average. These FY 1991 salary differences are larger than those reported in FY 1990. KU's salaries are not keeping up with those offered at peer institutions; the gap is widening.

Table 3 also gives some indication of relative size of faculty for each institution. KU's total full time headcount for FY 1991 was 939. Only Iowa and North Carolina had larger faculty.

Table 4 shows a similar comparison of KU salaries and faculty head count with Big Eight institutions. Again, KU salaries fell below the average by over \$3,000. Salaries for assistant professors ranked seventh.

Knowledge Transfer

Kansas has made significant progress in recent years in building linkages between its research institutions, state institutions, and industry. At the University of Kansas, two centers for excellence have been established with state funds to promote technology transfer in biosciences (Higuchi Biosciences Center) and computer aided systems engineering (Center for Excellence in Computer Aided Systems Engineering--CECASE). In addition, Mid-America Manufacturing Technology Center links manufacturers to scientists and engineers. Other institutes and centers that provide valuable linkages with specific sectors of the state's industry include the Energy Research Center and the Tertiary Oil Recovery Project. The Water Resources Institute, Transportation Research Center, Kansas Geological Survey, Kansas Biological Survey, Institute for Life Span Studies, and the Institute for Public Policy and Business Research provide linkages among state institutions and business sectors.

TABLE 3

Comparison of Cost Study Peer Institutions' Average Salary:
Preliminary Data FY 1991

School	Prof Salary	Prof F-T H*	Assoc Salary	Assoc F-T H	Asst Salary	Asst F-T H	Avg w/o Inst**	Total H Fac	Inst Salary	Inst F-T H	Avg w/Inst	Total F-T H
Colorado	60,400	425	45,400	248	38,100	212	50,854	885	27,400	19	50,361	904
Iowa	64,600	477	48,000	302	40,300	238	53,983	1,017	31,000	9	53,782	1,026
Kansas	52,800	464	40,300	261	33,600	204	45,072	929	25,600	10	44,864	939
North Carolina	65,800	560	47,300	313	38,100	221	54,911	1,094	37,900	15	54,681	1,109
Oklahoma	53,300	273	40,800	231	33,200	235	43,000	739	22,500	13	42,646	752
Oregon	49,200	233	37,800	191	31,700	179	40,394	603	25,100	71	38,783	674
Weighted Avg	59,147	2,432	43,805	1,546	36,012	1,289	48,982	5,267	26,998	137	48,424	5,404
KU Diff From Wtd	-6,347	-3,505	-2,412	-3,910	-1,398	-3,560						
Wtd Avg w/o KU	60,644	1,968	44,517	1,285	36,465	1,085	50,803***		27,108	127	50,551***	
KU Diff From Above	-7,844	-4,217	-2,865	-5,731	-1,508	-5,687						
KU Rank	5/6	5/6		4/6	4/6	4/6	4/6					

*Full-time headcount.

**Instructors.

***Salary average computed using the peer average dollars by rank and the KU head count for each rank.

Source: Annual Survey of Faculty Compensation 1991, Maryse Eymonerie Associates.

TABLE 4

Comparison of Big Eight Institutions' Average Salary:
Preliminary Data FY 1991

School	Prof Salary	Prof F-T H*	Assoc Salary	Assoc F-T H	Asst Salary	Asst F-T H	Avg w/o Inst**	Total H Fac	Inst Salary	Inst F-T H	Avg w/Inst	Total F-T H
Colorado	60,400	425	45,400	248	38,100	212	50,854	885	27,400	19	50,361	904
Iowa State	63,800	506	47,400	328	38,200	312	52,136	1,146	23,900	119	49,480	1,265
Kansas	52,800	464	40,300	261	33,600	204	45,072	929	25,600	10	44,864	939
Ks-State	50,500	330	39,300	227	34,300	265	42,184	822	26,100	72	40,889	894
Missouri	52,400	336	39,700	241	36,200	229	43,999	806	25,300	67	42,564	873
Nebraska	58,100	436	43,200	300	37,600	336	47,504	1,072	24,100	39	46,683	1,111
Okla St	51,900	316	40,000	262	34,900	222	43,285	800	27,500	24	42,825	824
Oklahoma	53,300	273	40,800	231	33,200	235	43,000	739	22,500	13	42,646	752
Weighted Avg	56,062	3,086	42,268	2,098	35,937	2,015	46,408	7,199	25,034	363	45,382	7,562
KU Diff From Wtd	-3,292		-1,968		-2,337		-1,336		566		-518	
Wtd Avg w/o KU	56,639	2,622	42,548	1,837	36,200	1,811	48,191**		25,018	353	47,945**	
KU Diff From Above	-3,839		-2,248		-2,600		-3,119		582		-3,081	
KU Rank	5/8		5/8		7/8		4/8		4/8		4/8	

*Full-time headcount.

**Salary average computed using the peer average dollars by rank and the KU head count for each rank.

Source: Annual Survey of Faculty Compensation 1991, Maryse Eymonerie Associates.

Research Support

The University of Kansas (Lawrence campus and Medical Center) ranks eighty-third in the nation in yearly R&D expenditures for science and engineering (Table 5). When compared to its peer institutions, KU ranks fourth out of six. When compared to other Big Eight institutions, KU ranks fifth. The University of Colorado-Boulder is the top ranked institution among peer and Big Eight schools, spending over \$140 million for R&D in 1989 compared to KU's \$57 million.

TABLE 5

Yearly R&D Expenditures of Peer and Big Eight Institutions
(Dollars in thousands)

Rank	Peer Institutions	Total			
		1989	1988	1987	1986
28	Univ Colorado-Boulder	143,694	128,015	112,276	104,576
39	Univ N Carolina-Chapel Hill	122,097	107,039	93,754	85,454
46	Univ Iowa-Iowa City	105,900	94,552	79,090	73,596
83	Univ Kansas-Lawrence	57,111	51,723	50,603	47,853
90	Univ Oklahoma-Norman	53,956	50,047	45,350	37,328
140	Univ Oregon-Eugene	22,476	18,567	16,815	16,202
Big Eight Institutions					
28	Univ Colorado-Boulder	143,694	128,015	112,276	104,576
49	Iowa State Univ	103,174	86,726	78,351	72,642
68	Univ Missouri-Columbia	74,055	66,365	61,212	57,653
74	Univ Nebraska-Lincoln	68,281	60,788	56,066	55,158
83	Univ Kansas-Lawrence	57,111	51,723	50,603	47,853
90	Univ Oklahoma-Norman	53,956	50,047	45,350	37,328
93	Oklahoma State Univ	53,655	56,636	47,420	45,919
99	Kansas State Univ	47,302	43,174	40,587	40,708

Source: NSF: Academic Science/Engineering: R&D Expenditures, Fiscal Year 1989.
NSF 90-321, Table B-28.

TABLE 6

R&D Expenditures of Peer and Big Eight Institutions: FY 1989
(Dollars in thousands)

Rank	Peer Institutions	Total	Federal Govt	State/ Local Govt	Industry	Institu- tional funds	All other sources
28	Univ Colorado-Boulder	143,694	109,145	1,692	6,728	12,175	13,954
39	Univ N Carolina-Chapel Hill	122,097	93,280	13,655	579	14,428	155
46	Univ Iowa-Iowa City	105,900	74,271	1,121	10,301	18,102	2,105
83	Univ Kansas-Lawrence	57,111	26,420	2,674	2,809	23,640	1,568
90	Univ Oklahoma-Norman	53,956	17,020	3,052	1,991	24,226	7,667
140	Univ Oregon-Eugene	22,476	17,286	329	163	3,974	724
Big Eight Institutions							
28	Univ Colorado-Boulder	143,694	109,145	1,692	6,728	12,175	13,954
49	Iowa State Univ	103,174	28,895	23,718	4,408	42,644	3,509
68	Univ Missouri-Columbia	74,055	22,312	11,210	6,434	29,864	4,235
74	Univ Nebraska-Lincoln	68,281	25,803	22,006	2,675	15,931	1,866
83	Univ Kansas	57,111	26,420	2,674	2,809	23,640	1,568
90	Univ Oklahoma-Norman	53,956	17,020	3,052	1,991	24,226	7,667
93	Oklahoma State Univ	53,655	14,116	1,853	1,645	34,613	1,428
99	Kansas State Univ	47,302	15,951	21,133	1,790	6,384	2,044

Source: NSF: Academic Science/Engineering: R&D Expenditures, Fiscal Year 1989. NSF 90-321, Table B-25.

Table 6 shows the distribution of R&D expenditures by funding source. The University of Kansas received over \$26 million of its \$57.1 million from federal sources. State and institutional funds

totaled \$26.3 million.³ Compared to its peer institutions, KU ranks fourth in amount of support from federal sources. Compared to other Big Eight Institutions, it ranks third in federal funding.

Between 1986 and 1989, expenditures for S&E research grew steadily (Table 7). Federal funding supported 46% of S&E research expenditures in 1989, while institutional funds accounted for 41%.

Table 8 shows R&D expenditures for FY 1989 by field.⁴ At KU, the life sciences received the largest share of funding. However, since the data were not reported for faculty per capita expenditures, it is difficult to compare across fields and across institutions and draw any conclusions about productivity.

No data were available for the University of Kansas's expenditures for research equipment.⁵ However, Table 9 shows the total and federally financed expenditures for research equipment for peer and Big Eight institutions. Again, University of Colorado ranked highest for expenditures for research equipment.

TABLE 7

Scientific and Engineering Expenditures by Source of Funding for FY 1986-1989
University of Kansas Lawrence and Medical Center

Source	Thousands of Dollars				Percent of Total			
	1986	1987	1988	1989	1986	1987	1988	1989
Federal	\$21,837	\$22,941	\$24,880	\$26,420	45.63%	45.34%	48.10%	46.26%
State/Local Government	1,922	2,295	2,227	2,674	4.02%	4.54%	4.31%	4.68%
Industry	2,527	3,259	2,934	2,809	5.28%	6.44%	5.67%	4.92%
Institutional Funds	20,242	20,656	20,427	23,640	42.30%	40.82%	39.49%	41.39%
All Other Sources	1,325	1,452	1,255	1,568	2.77%	2.87%	2.43%	2.75%
Total	\$47,853	\$50,603	\$51,723	\$57,111				

Source: "Early Release of Summary Statistics on Academic Science/Engineering R&D Expenditures," National Science Foundation, October, 1988.

³NSF cautions that care should be observed when interpreting data on source of funds. R&D support excludes research funded through unrestricted accounts and from corporate foundations, endowments, and fellowships to students. In addition, institutional policy may determine whether unrestricted state support is reported as state or as institutional funding.

⁴Fields as defined by NSF: Engineering includes aeronautical and astronautical, chemical, civil, electrical, mechanical, other. Physical sciences includes astronomy, chemistry, physics, other. Environmental sciences includes atmospheric, earth sciences, oceanography, other. Life sciences includes agricultural, biological, medical, other. Social sciences includes economics, political science, sociology, other.

⁵Request for equipment comprised a large part of the budgets submitted in Kansas' EPSCoR Implementation Plan.

TABLE 8
R&D Expenditures by Science/Engineering Field: FY 1989
(Dollars in thousands)

Rank	Peer Institutions	Total	Engi- neering	Physical Sciences	Environ- mental Sciences	Math & Computer Science	Life Sciences	Psy- chology	Social Sciences	Other Sciences
28	Univ Colorado-Boulder	143,694	15,613	21,121	22,511	3,950	72,878	4,957	2,629	35
39	Univ N Carolina-Chapel Hill	122,097	0	6,508	4,700	8,055	91,710	808	10,316	0
46	Univ Iowa-Iowa City	105,900	8,710	13,114	4,417	1,986	78,000	1,269	2,404	0
83	Univ Kansas-Lawrence	57,111	3,728	5,710	7,324	621	29,894	1,086	286	8,462
90	Univ Oklahoma-Norman	53,956	8,529	5,276	8,632	1,512	24,853	384	3,765	1,005
140	Univ Oregon-Eugene	22,476	280	9,589	2,510	1,203	6,007	1,405	1,128	354
Big Eight Institutions										
28	Univ Colorado-Boulder	143,694	15,613	21,121	22,511	3,950	72,878	4,957	2,629	35
49	Iowa State Univ	103,174	25,225	4,276	600	8,603	56,107	617	5,564	2,182
68	Univ Missouri-Columbia	74,055	5,653	1,713	1,128	328	57,910	1,461	4,230	1,632
74	Univ Nebraska-Lincoln	68,281	7,253	4,861	2,314	1,103	49,093	602	2,651	404
83	Univ Kansas-Lawrence	57,111	3,728	5,710	7,324	621	29,894	1,086	286	8,462
90	Univ Oklahoma-Norman	53,956	8,529	5,276	8,632	1,512	24,853	384	3,765	1,005
93	Oklahoma State Univ	53,655	9,812	3,811	1,003	1,029	29,247	238	6,076	2,439
99	Kansas State Univ	47,302	4,651	3,841	295	508	35,441	328	1,693	545

Source: NSF: Academic Science/Engineering: R&D Expenditures, fiscal year 1989. NSF 90-321, Table B-34.

TABLE 9
Total and Federally Financed Current-Fund Expenditures for Research Equipment, FY 1986-1989
(Dollars in thousands)

Rank	Peer Institutions	Total				Federally Financed		
		1989	1988	1987	1986	1989	1988	1987
35	Univ Colorado-Boulder	8,079	7,802	6,178	6,640	6,614	6,214	5,086
39	Univ N Carolina-Chapel Hill	7,901	7,062	5,762	6,408	4,774	4,402	3,417
78	Univ Oklahoma-Norman	4,207	4,664	4,215	1,827	1,361	1,478	1,951
Univ Iowa-Iowa City *								
Univ Kansas-Lawrence *								
Univ Oregon-Eugene *								
Big Eight Institutions								
35	Univ Colorado-Boulder	8,079	7,802	6,178	6,640	6,614	6,214	5,086
66	Univ Nebraska-Lincoln	5,114	3,316	2,734	3,358	1,082	1,409	1,400
70	Univ Missouri-Columbia	4,786	5,763	3,368	4,267	1,341	831	762
78	Univ Oklahoma-Norman	4,207	4,664	4,215	1,827	1,361	1,478	1,951
81	Iowa State Univ	4,092	4,468	3,965	2,239	2,091	2,790	2,450
85	Oklahoma State Univ	3,877	4,595	2,365	1,997	1,519	2,197	998
88	Kansas State Univ	3,791	3,724	3,314	5,254	1,666	1,797	1,828
Univ Kansas *								

* Not included in listing of top 100 institutions.

Source: NSF: Academic Science/Engineering: R&D Expenditures, fiscal year 1989. NSF 90-321, Table B-64.

Level of S&E Research Productivity

Grants Received. External funding for S&E research and educational service activities was analyzed. Research awards provide funds to conduct research. Educational service awards provide funds for graduate and postgraduate training or other educational activities such as summer research and training opportunities for high school science teachers. Funding for research and educational service proposals at KU totaled \$122,557,063 for the past six years (1986-1991). Total S&E funding levels for the Lawrence campus peaked in 1989 at \$24,115,101, then decreased. When corrected for inflation (Figure 1), funding trends are relatively flat. Although funding of research projects in 1991 increased slightly over 1990 levels, support for educational services (i.e., training grants) continued to decline. Awards for research accounted for 85% of the total awards for the period reported (see Appendix, Table 2).

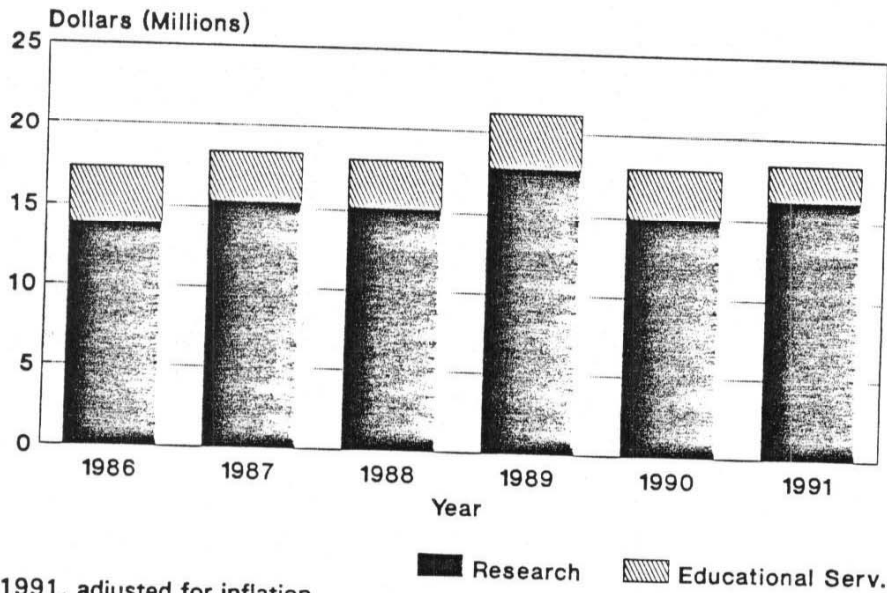
Figure 2 shows an approximate distribution of research and education funding grouped by general fields.⁶ This graph, which presents data combined for 1986 through 1991, shows that some relatively small groups, such as Pharmacy with 23 faculty, are providing proportionally large shares of total S&E funding (see Appendix, Tables 2 through 25 for details). This suggests that some groups may have an opportunity to increase their funding capacity. These groups should evaluate what can be done to increase their funding. Issues such as teaching loads, grant development services, and incentive systems should be examined to determine what actions are needed to support increased grant activity.

Funding to the University of Kansas (Lawrence Campus) from NSF accounted for nearly 13% of the S&E external funds received from all sources for the six years examined (Table 10). NSF funding levels were very stable from 1986 through 1990. Preliminary totals for 1991 indicate funding increased by about \$1 million over 1990 levels (see Appendix, Tables 26 through 28 for details).

Analysis of submissions trends indicates that the number of NSF grants submitted rose in the mid-1980s, but leveled off in the last four years (Figure 3). Despite the increase in proposals, the number of funded grants has remained relatively constant. This

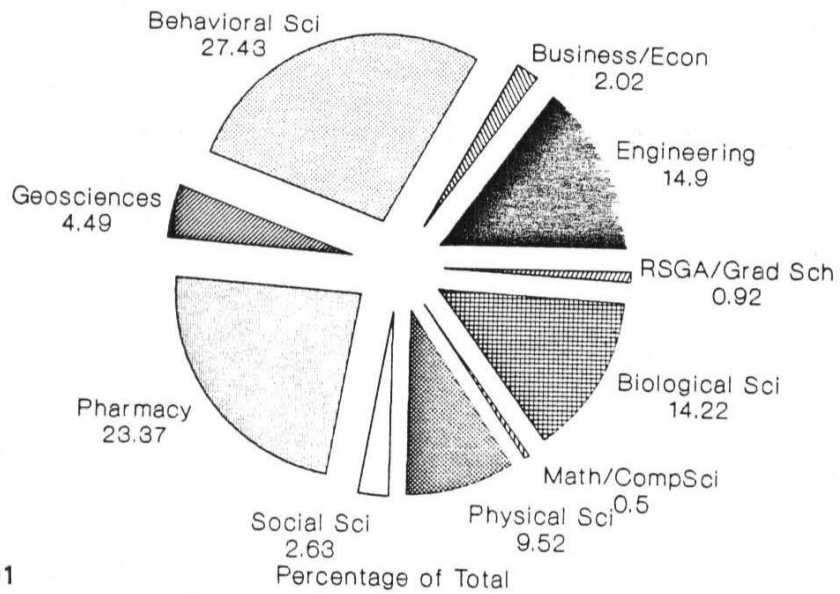
⁶Behavioral Sciences includes Bureau of Child Research/ILSS, Human Development, Psychology. Geosciences includes Geology, Kansas Geological Survey, Geography. Pharmacy includes Medicinal Chemistry, Pharmacology, Pharmaceutical Chemistry, Higuchi Biosciences Centers, Biomedical Research Center. Social Sciences includes Anthropology, Political Science, Sociology, Anthropology Museum. Physical Sciences includes Physics and Astronomy and Chemistry. Biological Sciences includes Biochemistry, Botany, Entomology, Environmental Studies, Physiology and Cell Biology, Systematics and Ecology, Microbiology, Animal Care Unit, Enzyme Labs, Entomology Museum, Museum of Natural History, Kansas Biological Survey. Business/Economics includes School of Business, Economics, Institute for Public Policy and Business Research. The School of Education was not included because this study focused upon science and engineering fields.

FIGURE 1
TOTAL S&E AWARDS AT KU
FOR RESEARCH AND EDUCATIONAL SERVICES



RSGA/IPPBR 1991, adjusted for inflation.

FIGURE 2
DISTRIBUTION OF TOTAL S&E FUNDING
RESEARCH AND EDUCATION AWARDS
1986-1991



RSGA/IPPBR 1991

TABLE 10

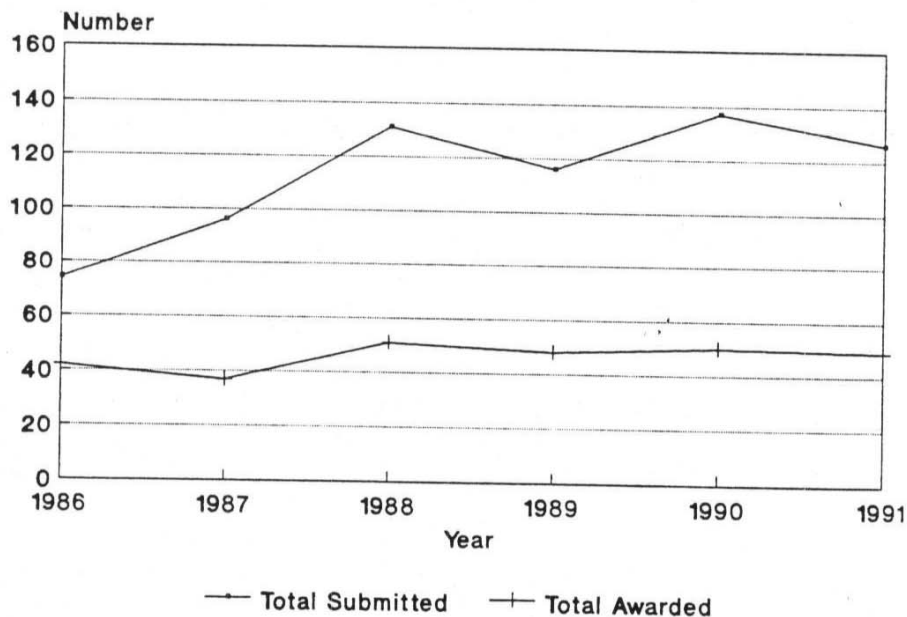
Trends in External S&E Funding at the University of Kansas

\$ Awarded by Year	NSF Only	All Sources*	Proportion Funded by NSF
1986	\$2,480,171	\$17,854,253	13.89%
1987	2,049,408	19,352,163	10.59%
1988	2,883,572	19,547,525	14.75%
1989	2,931,558	24,115,101	12.16%
1990	2,219,152	21,489,488	10.33%
1991**	3,515,984	21,995,120	15.99%
Total \$ Awarded	16,079,845	124,353,650	12.93%
Year Mean	2,679,974	20,725,608	

*Includes awards for research and educational services only.
 **Preliminary.

Source: Derived from data provided by Research Support and Grants Administration, 1991.

FIGURE 3
 NUMBER OF PROPOSALS SUBMITTED TO NSF



decrease in the proportion of grants funded reflects increased competition for federal funds and perhaps an inability of KU's science and engineering faculty to compete for those funds. To maintain and increase the NSF funding levels given the increased competition for limited resources, number of proposals submitted by KU's S&E faculty must continue to increase.

While the total number of proposals submitted to NSF has increased, total dollars submitted in those proposals' budgets was much more variable (Figure 4). However, the total dollars awarded remained flat, mirroring the trend in number of proposals awarded.

Table 11 shows that NSF grant awards to KU S&E faculty tend to have modest budgets. Only 1.29% of NSF awards were \$500,000 or larger. Most were single investigator type grants below \$50,000 or between \$101,000 and \$500,000. KU is not attracting the large program projects. This is a deficit that must be addressed if the institution wants to make significant gains in its level of funded research.

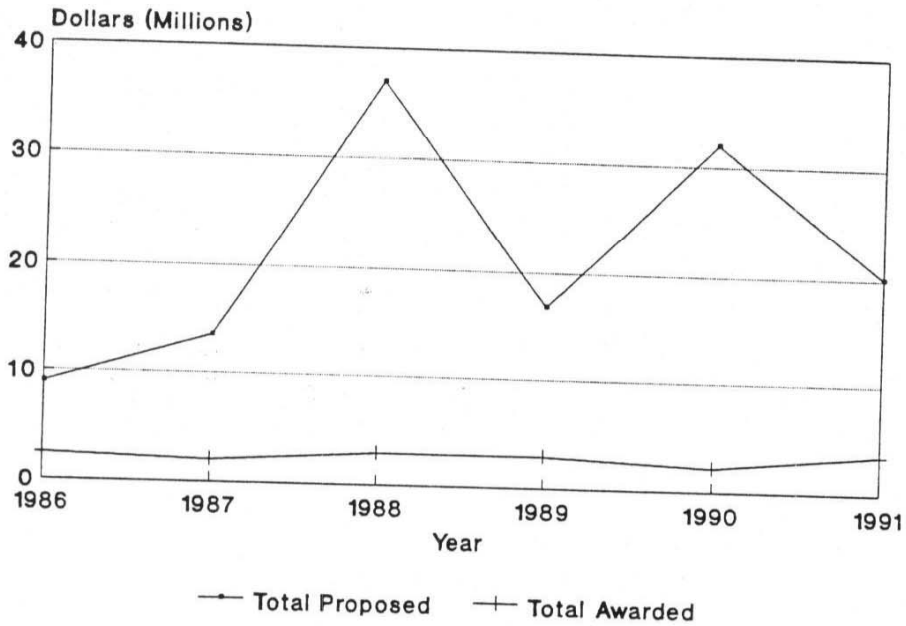
Another factor that needs to be considered is the low number of educational proposals awarded to KU S&E faculty (Table 11). Only seven awards have been received since FY 1986. Although NSF did very little funding of educational service projects until the last two years, this area has had tremendous growth recently. Funding should continue to grow in the future. Faculty should not overlook the potential of training grants and other educational service awards for supporting graduate students, increasing research capacity, and fulfilling the university's commitment to graduate education.

Twenty-four (25.81%) of the 93 faculty who have submitted NSF proposals in the past are responsible for 66.26% of the total NSF dollars awarded at KU (Table 12). Loss of any of these faculty would have a serious impact on the institution's NSF funding capacity. In addition to the research dollars they generate, they may have the experience and skills necessary to provide leadership for program projects and mentoring of young faculty. More mentoring of young faculty, more "in house" peer review of grant applications, and development of program projects needs to occur to increase the pool of faculty receiving large NSF awards.

To summarize, analysis of grants received at KU over the past six years indicates:

- * External funding for S&E research and educational activities peaked in 1989. When corrected for inflation, funding trends have been stable, neither grew nor declined.
- * Further analysis is needed to determine why award levels are small in some areas, such as social and computer science, and what can be done to increase levels of external funding.

FIGURE 4
DOLLARS SUBMITTED TO AND AWARDED BY NSF



RSGA/IPPBR 1991

TABLE 11

**Total NSF Awards to University of Kansas
 July 1985 - June 1991**

	Number of PI	Total \$ Awarded	Distribution by Amount Awarded				
			\$1-50K	\$51-100K	\$101-500K	\$501-1mill.	>\$1mill.
Research	93	\$14,140,887	57	32	51	2	0
Education	3	1,134,722	2	2	3	0	0
Other	6	804,236	2	0	4	0	0
Total	102	\$16,079,845	61	34	58	2	0
Percent of Total			39.35%	21.94%	37.42%	1.29%	0.00%

TABLE 12

**Analysis of Top 24 NSF Research Faculty at KU
 1985-1990**

	Number	Awards Submitted	Amount Awarded
Top Funded NSF Faculty	24	53	\$ 9,369,391
Total NSF-Awarded Faculty	93	142	\$14,140,887
Percent of Total	25.81%	37.32%	66.26%

- * Given the increased competition for limited funds, the number of proposals submitted, and perhaps more importantly, resubmitted to NSF should be increased.
- * NSF funding at KU is generally restricted to single investigator awards which limit size of awards. To significantly increase funding, more program projects must be obtained.
- * Given that a few faculty have obtained the majority of KU's NSF funds, every effort should be made to increase the pool of faculty with large bases of funded research.
- * More educational services projects should be developed and submitted to increase levels of external sources of funding for graduate education.

Degrees Awarded. Analysis of bachelor and master degrees granted by S&E departments at the University of Kansas showed slow growth (Table 13). The number of doctoral degrees awarded has been more variable, but the general pattern is toward fewer, not more, doctoral degrees. This trend should be analyzed further to determine causes. Factors such as lack of funding support, difficulty in recruiting graduate students, and retention of graduate students should be examined.

Graduate Enrollment. Total graduate and law enrollment showed fairly steady growth from 1986 through 1989, dropped in 1990, and rebounded in 1991 (Table 14). Within the schools where science and engineering departments are found (engineering, liberal arts and sciences, pharmacy), enrollment has been stable over the last six years.

Barriers and Accomplishments

As reported above, KU has fallen behind its academic peers in funded research in the areas of science and engineering. To determine the reasons why, in-depth interviews with 32 S&E faculty, staff, and administrators were conducted. See Appendix for copies of questionnaires used. Those interviewed included departmental heads, NSF-funded faculty, NSF-aspirant faculty, externally funded faculty who did not have NSF funds, faculty recently hired by KU who had funding at other universities, grant support staff and administrators. Findings are divided into state, university, and departmental issues although we fully recognize interrelations among them. These findings summarize the views of those interviewed; they are perceptions that reflect how KU sees itself.

State Issues

Infrastructure. Although state support for higher education in Kansas is high on a per capita basis, the specific support for science and technology education and research is not adequate to the need. Contemporary science and science education, especially

TABLE 13

Scientific and Engineering Degrees Awarded: Lawrence Campus

Area	Bachelor			Master			Doctorate		
	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
Engineering	283	282	283	90	101	94	18	17	16
Science:									
Computer Science	73	84	67	12	11	18	3	2	3
Mathematics	30	24	31	3	10	12	0	0	1
School of Pharmacy	93	82	81	11	15	21	9	9	12
Biological Sciences	148	147	192	14	11	18	22	17	25
Physical Sciences	65	62	43	26	13	13	9	14	7
Psychology/Human Devel.	208	225	284	33	35	35	24	18	19
Social Sciences	229	266	303	60	78	65	17	7	11
Science Subtotal	846	890	1,001	159	173	182	84	67	78
S&E Total	1,129	1,172	1,284	249	274	276	102	84	94
Total Campus	3,192	3,234		1,029	1,065		387	351	

Source: Office of Institutional Research and Planning.

TABLE 14

Graduate/Law Enrollment Headcount

Fall	Total	Engineer	LA & Sci	Pharmacy
1986	6,747	460	2,064	158
1987	6,703	479	1,980	176
1988	6,835	478	2,013	199
1989	7,059	496	2,105	198
1990	6,960	497	2,241	199
1991	7,234	559	2,403	203

Source: Office of Institutional Research and Planning. "University of Kansas Profiles."

graduate education, are expensive. Research universities require extensive computer facilities, libraries with expensive specialized journals, laboratories capable of innovative research, funds for scholarly travel, top faculty, and promising graduate students. Funding for all of these areas is below minimal levels, forcing KU to use whatever research money it does receive to pay for research infrastructure. For example, a substantial percentage of grant overhead money pays for academic computing.⁷ While everyone recognizes that computing is essential to research, the use of research overhead to fund such a basic service is a missed opportunity. With better basic support, research overhead money could be used to support grant proposals, promising novel research areas, graduate students, and faculty, thereby encouraging more research. Among those interviewed, there was general consensus that too little overhead money is returned to the departments and investigators to

⁷For FY 1990, 17% (\$811,993) of the research overhead budget went to Computer Reserve and 11.06% (\$521,485) went to the Office of Information Systems.

serve either as a reward for success or seed money for future effort.

Equipment. The state also erects barriers in the purchase of equipment. The right equipment can mean the difference between successful and unsuccessful research, and overly restricting purchases is a needless and costly restraint on science. Several researchers lamented long delays in getting equipment; sometimes spending months in bidding wars with the state purchasing office, months that should be spent on science. State government has a legitimate concern for accountability, but excessive monitoring of scientific purchases slows research. This problem is most evident in the laboratory and other equipment-dependent sciences, such as computer science.

Equipment, such as microcomputers, that is available on state contract can be purchased with relative ease. Unfortunately state contract prices tend to be higher than prices on the open market, thus forcing researchers to needlessly spend scarce contract dollars. When equipment is not on state contract or when the listed equipment is not adequate, researchers either spend valuable research time writing specialized bids or settle for less than ideal purchases.

University Issues

Changes in Science. In general, KU has not kept up with changes in the scientific enterprise; the reputation of many departments have slipped over that last 20 years. Contemporary science is, for better or worse, expensive and dependent on collaboration. Science is no longer driven by the individual researcher with a good idea and a few test tubes (if it ever was). Yet, for the most part, science at KU follows the individual-investigator model. The university has few major research labs that focus the research efforts of teams on a single area: Higuchi Biosciences Center; Institute for Life Span Studies; Center for Excellence in Computer Aided Systems Engineering; Energy Research Center; Tertiary Oil Recovery Project. KU scientists have been successful in funding modest individual projects but have generally been unsuccessful in establishing research centers; few have turned individual success into institutional success.

With the increased dependence of science on external funding, funding opportunities dictate the research agendas of the various disciplines. Decisions made in Washington to fund particular areas at certain levels shape the development of individual fields. Several of those interviewed felt that following funding opportunities rather than research ideas was bad for science. Nonetheless, universities that receive greater grant funds closely monitor the changing priorities of funding agencies. Over time these universities adapt their staffing and support to the changing funding environment. Keeping up with funding trends presents dilemmas for

KU, which has several highly regarded programs, such as systematics, that are no longer national funding priorities.

Undergraduate Education. Although KU is an important center for graduate education and research in Kansas, many faculty felt that undergraduate education remains its primary emphasis and strength. No one interviewed challenged the importance of undergraduate education; several noted that many strong research universities are rediscovering the central role of teaching undergraduates. Still, many commented on the need for greater emphasis on graduate education and research; for greater balance in KU's educational mission.

The stress on undergraduate teaching also changes the way departments are organized. Although accomplished researchers are often outstanding teachers, uncontrolled undergraduate enrollment in the late 1980s forced resources to focus on hiring faculty primarily to cover additional course demands. Strong undergraduate teaching departments cover the breadth of their discipline; strong research departments specialize. With the exception of engineering, teaching loads in KU science departments are similar to other research universities,⁸ but labs and equipment required by undergraduate programs preclude their use in research. Graduate students often spend more of their time as teaching assistants and lab instructors than apprentice researchers.

Graduate Education. Most of those interviewed stressed that the foundation of successful research programs was graduate, especially doctoral and postdoctoral, education and that any improvement in scientific research begins with improving graduate education. Departments that have recently increased both the number and quality of their graduate students have also increased their research activity. Graduate students and postdoctoral fellows simultaneously focus faculty attention on research, and their work and ideas advance research programs. Pressure to fund students often leads to grant applications.

KU faces several barriers in building strong graduate programs. Far from the coasts and population centers, KU has difficulty attracting promising students. Compounding location problems, KU does not offer competitive support for graduate students. Fellowships are rare; most graduate students must rely on teaching, research assistantships, and personal funds. Assistantships are low by national and regional standards. State rules give graduate teaching assistants a partial reduction in tuition but require graduate research assistants to pay the full amount. These rules not only reduce the dollar value of graduate support, they discourage student involvement in research.

⁸Engineering faculty, unless granted release time for administrative or research responsibilities, teach four courses a year. Faculty in most of the natural sciences typically teach two courses a year.

In the sciences, a high proportion of the best graduate students are foreign born. This is a long-term, national trend. Some have difficulty communicating in English, while even fluent speakers often have trouble passing English proficiency exams. Foreign graduate students may not qualify for teaching positions and are often supported from the beginning by research money. Funding first and second year graduate students on research grants can prove unproductive, according to our interviews. Beginning students rarely have the skills to contribute to research programs; they are carried on grants for potential, not present, contributions. Again the lack of adequate funding for these students forces departments to spend scarce grant money to make-up for inadequate support.

Incentives for Research. Research, like any creative work, is demanding. Even the most successful speak of long hours and the constant possibility of failure. Young researchers may give up; more senior researchers often give out. Successful grant recipients, like successful scholars, are persistent. Younger scientists told of repeated grant submissions and rejections before they were awarded their first grant. Senior researchers, ones who had been consistently funded for decades, spoke of the difficulty of sustaining their effort. Sustaining a long, productive research career requires institutional support. Nothing will make creative research easy, but successful research universities minimize the costs to individual researchers and departments.

Across the university, incentives for funded research vary. In the lab sciences, where productivity depends on funding, grant activity is considered an essential responsibility. New faculty are hired with an eye for their potential in attracting grants, and promotion and tenure depend on a record of, at least, attempts for funding. Although other universities require successful funding for promotion, KU science departments were satisfied with a record of attempts and evidence of potential. In general, grants are seen as a means to research, but not a positive end in themselves. In the lab sciences, funded research is viewed as a contribution to the common good.

In other departments--principally those where research productivity is less dependent on grants--funded research is considered positive but not essential. Grant potential and proposal submissions may not be considered important in hiring, promotion, and merit review. As expected, such departments have fewer grant active faculty. In a small number of departments, externally funded research is discouraged; it is viewed as an abrogation of researcher's responsibility to self-directed research and a source of unwelcome resource disparities.

While few KU departments are cutthroat in requiring funded research--rejecting promotions, restricting equipment access--fewer actively discourage grant activity. In general, KU science departments reward the products of research, primarily publications, but

not intervening efforts, such as proposal writing and grant submissions. Therefore, researchers who can produce results with little or no external funding rationally by-pass grant seeking. Although departments offer some support for funded research through release from teaching and a greater proportion of graduate teaching, grant activity at KU is based primarily on individual faculty initiative, not institutional imperative. Many of those interviewed noted that the rewards, especially raises, were inadequate to motivate the extra work funded research requires.

Informal Network. With some notable exceptions, KU faculty are not active participants in the informal networks surrounding funding agencies. Most of those interviewed observed that factors other than the quality of the proposal often enter into agency decisions in making awards. Agencies, like NSF or NIH, and foundations, like the Ford or Sloan Foundations, emphasize certain research areas and have guidelines about appropriate budget figures. Experienced grant getters recognize the importance of such informal information in the success of any individual proposal. One scientist with a long record of external funding told of how he wrote the proposals with the interests and prejudices of the reviewers in mind. Such tailoring increases success but requires insider knowledge.

KU is far from most funding agencies, and several of those interviewed noted that we must make an extra effort to visit funding agencies, participate in review panels, and maintain contacts. KU typically funds scholarly travel to report on findings but does not adequately underwrite travel and other expenses at the proposal stage. This causes missed opportunities and wasted effort as KU researchers fail to submit grants in areas of potential success or do not target proposals to research areas with greater opportunities for funding. In a related problem, several faculty noted that by participating in continual, informal contact, researchers can anticipate requests for proposals. Too often researchers learn of RFPs too late in the process for timely and high quality response.

Respondents stressed that direct contact between researchers and funders must increase. Sending administrative representatives to Washington is not enough. Several suggested that established researchers should take junior colleagues to meet funding agents and that the university must support such travel.

Resources for Research. In addition to facilities, faculty, and graduate students, KU has two primary internal resources for research: equipment and internal grants. As discussed above, the state does not adequately meet KU's basic scientific equipment needs and complicates equipment purchases. In addition, science and engineering technical support and service facilities are often not adequate to support cutting edge research.

Typically, KU distributes its scarce equipment money to supply start-up equipment for new faculty. In many departments, this is little more than a microcomputer, but in some fields, basic lab equipment can easily exceed \$100,000. High start-up costs consume much of the university's equipment money; at times these costs force departments to avoid hiring in certain expensive research areas. With new faculty receiving much of the equipment money, established faculty must turn to grant support to repair, replace, and expand equipment. Many divert research energy into grants for the purchase of expensive equipment.

Federal support for the purchase of basic equipment waxes and wanes. Faculty reported that some agencies are reluctant to fund requests for equipment, which traps them in the cycle of needing equipment to be competitive but not having funds to obtain the equipment. One explanation why KU has been less successful in securing large programmatic grants is judgments by funding agencies that we do not have the capacity to complete such projects.

KU also provides research support through the General Research Fund (GRF). The program awards small grants either through internal peer review or to new faculty on a noncompetitive basis. The GRF process presents several problems for increasing externally funded research. First, GRF funds are much easier to receive than external grants. They are a low-risk opportunity to fund research, but the awards are so small that the nature of the project is often limited. GRF awards allow faculty to keep the research flame alive but do not provide the resources to turn up the scientific heat. Second, the review processes gives greater weight to specific research projects rather than to proposals for external funds. Few faculty use GRF awards to pilot test research procedures to strengthen larger grant proposals, and some faculty turn to the GRF awards year after year without writing proposals for external funds. There is no incentive, except for the increased support, to do the work and take the risk for an external grant proposal.

Decentralization Trade-Off. Another potential resource is the Office of Research, Graduate Studies, and Public Service (RGSPS). Nearly everyone was positive about RGSPS: they were always ready to help, especially with budget questions. Nearly everyone also said that the office was understaffed and unable to encourage more funded research. With their current resources, RGSPS cannot take a more active role in uncovering funded research opportunities and matching scientists to opportunities. They are, at best, a responsive, not an initiating, office.

Respondents differed on whether RGSPS should be expanded, however. Some favored a more decentralized approach with resources going to or staying with departments. They argued that resources must stay with those who know the science. Others felt that the various research institutes on campus, such as the Natural History Museum, the Higuchi Biosciences Center, CRINC, and the Life Span Institute, provided the ideal compromise between a centralized and

a decentralized system. These institutes develop close working relationships with various funding agencies, seek out faculty involvement, assist in proposal preparation, and manage the administrative side of grants such as accounting, purchases, and hiring. These institutes also provide the slack resources to tide scientists over from one grant to another. In general, these institutes represent pockets of success in funded research. They were often the institutional result of faculty efforts and continue to serve faculty interests.

The decentralization of research support (or, perhaps better said, the lack of centralized support) does present one major problem: faculty and research areas not served by institutes or in grant successful departments are left out. These individuals do not have the resources and the support for their funded projects. They can turn to RGSPS for help but must take more initiative than their more fortunate colleagues. Moreover, with their limited budget and small staff, RGSPS is not able to provide general assistance in grant preparation and revisions. It is not a criticism of those working in RGSPS to observe, as did most of the faculty we interviewed, that RGSPS does not and cannot provide adequate encouragement or support for faculty interested in funded research.

Departmental Issues

Whether or not KU decides to increase centralized support for funded research, academic departments are and will remain the primary locus for research activities. Departmental norms, expectations, procedures, and capabilities all directly affect the amount of externally funded research. The effects of all other university units are indirect. Departmental norms about the importance of funded research are most evident in hiring and promotion decisions. Departments with strong records in funded research hire faculty who hold promise of continuing this tradition. New faculty are encouraged to submit and resubmit proposals. Grant-successful departments value proposal submissions, even when they are not funded, during merit review. In these departments, grant success and potential are carefully considered during tenure decisions.

Departments with limited grant activity do not place a high priority on proposal submissions and grant potential during hiring and promotion. They focus primarily on the products of research, such as publications and presentations. This focus on products discourages funded research to the extent researchers can look to internal funding sources, such as the GRF, or can produce adequate publications without external funds. Writing, submitting, and resubmitting proposals takes time; several noted during the interviews that a good proposal is as least as time consuming as a good article. If proposal writing takes time away from publishing, then grant seekers may be penalized for their efforts during merit review.

Departments also vary in their capacity to support funded research, and this is largely the result of their history of grant activity. Successful departments and labs usually have secretaries or administrative assistants who know from experience how to assemble strong proposals. These departments also have considerable skill in managing grants, freeing investigators from equipment bids, payroll problems, and so on. In such departments and labs, researchers can focus on the substance of the proposal, leaving the budget and overall packaging to the department. Successful departments also have other faculty who review proposals with an experienced eye.

Departments with limited experience with funded research cannot offer the same level of support. Investigators can turn to RGSPS for limited assistance but for the most part they must take on the entire effort of grant preparation and, if funded, grant management. In one extreme case, a respondent had to pay personally to photocopy a proposal: he was punished for his effort, not encouraged and supported.

If departments are the basic unit for research, their role is paradoxical. Departments are self-reproducing systems, usually hiring to fill vacancies, not to build new and potentially more fundable research areas. For departments with strong traditions of funded research, this pattern reinforces successes, but for departments with little history in funded research, the conservative nature of academic departments becomes a major barrier to increasing grant activity. Most often, deans appoint department chairs from within based on departmental recommendations and who reflect current norms. Appointing outsiders is often more expensive--it requires hiring senior faculty--and can lead to turmoil. Nevertheless, hiring from the outside increases the likelihood of changing departmental norms, and despite the potential for destructive conflict, outside chairs have at times increased grant activity in previously inactive departments.

The importance of departments has another negative influence on funding: departments because of their narrow focus cannot, in the words of one interviewed, "think big." KU is reasonably successful in getting individual research awards. KU fails, however, to attract the large programmatic grants that are generally beyond the reach of any individual department. In this realm, higher administration--deans, vice chancellors, the chancellor, and event the regents--need to lead the way. Throughout the interviews, the observation that all innovation at KU comes from the bottom, suggests that administrative leadership is necessary to push the university forward in science. Given the tradition of decentralization, many faculty may find such leadership threatening, but without it KU is unlikely to move forward in the world of contemporary science.

Conclusions

Based upon the assessment, the University of Kansas should address the following issues to improve science and engineering research capacity:

- * Increase the emphasis on graduate, especially doctoral, education to drive the research mission of the university.
- * Provide more competitive salaries for graduate research assistants and provide tuition fee waivers for graduate research assistants similar to those provided for undergraduate teaching assistants.
- * Improve support for equipment purchase and maintenance. Remove regulations that hamper purchase of research equipment.
- * Improve support for technical support and service facilities.
- * Stimulate grant development by providing more seed money, travel money, and better grant development services that minimize the effort researchers must expend to obtain grants.
- * Reward grant submission efforts as well as the products of research to increase number of submissions.
- * Make grant activity an institutional imperative rather than relying on individual faculty initiative.
- * Hire faculty who hold promise of developing strong programs of funded research.
- * Make faculty salaries more competitive.
- * Provide administrative leadership to push the system forward in science and engineering. Large programmatic grants are generally beyond the reach of any individual department and leadership is needed to "think big" and provide resources needed to build areas competitive in national and international arenas and to promote team research.

APPENDIX

Table No.

1. KU S&E Demographics as of October, 1991
 2. Trends in Science and Engineering Funding at KU: Awards for Research and Educational Services
 3. Trends in Science and Engineering Funding at KU: Awards for Research and Educational Services
 4. Trends in Science and Engineering Funding at KU: Awards for Research
 5. Trends in Engineering Funding at KU: Awards for Research
 6. Trends in Biological Sciences Funding at KU: Awards for Research
 7. Trends in Behavioral Science Funding at KU: Awards for Research
 8. Trends in Geoscience Funding at KU: Awards for Research
 9. Trends in Pharmacy Funding at KU: Awards for Research
 10. Trends in Physical Science Funding at KU: Awards for Research
 11. Trends in Social Science Funding at KU: Awards for Research
 12. Trends in Mathematical and Computer Science Funding at KU: Awards for Research
 13. Trends in Business/Economics Funding at KU: Awards for Research
 14. Trends in Research Support Office Funding at KU: Awards for Research
 15. Trends in Science and Engineering Funding at KU: Awards for Educational Services
 16. Trends in Engineering Funding at KU: Awards for Educational Services
 17. Trends in Biological Sciences Funding at KU: Awards for Educational Services
 18. Trends in Behavioral Science Funding at KU: Awards for Educational Services
 19. Trends in Geoscience Funding at KU: Awards for Educational Services
 20. Trends in Pharmacy Funding at KU: Awards for Educational Services
 21. Trends in Physical Science Funding at KU: Awards for Educational Services
 22. Trends in Social Science Funding at KU: Awards for Educational Services
 23. Trends in Mathematical and Computer Science Funding at KU: Awards for Educational Services
 24. Trends in Business/Economics Funding at KU: Awards for Educational Services
 25. Trends in Research Support Office Funding at KU: Awards for Educational Services
 26. Trends in Funding for Research, Educational Services, and Other Projects from NSF to University of Kansas: July '85 - June '91
 27. Yearly Awards for Research from NSF to University of Kansas
 28. Awards for Educational Services from NSF
Awards for Other Projects from NSF
 29. Rank by Total NSF Research Dollars Awarded: July '86 - June '91
 30. Awards for Research from NSF to University of Kansas: July '85 - June '91
- K*STAR Questionnaire #1 (Questions for Kim Moreland on NSF Funding at KU)
K*STAR Questionnaire #2 (Questions for Chairs of NSF-Eligible Departments)
K*STAR Questionnaire #2 (Questions for NSF-Funded Faculty)

TABLE 1

KU S&E DEMOGRAPHICS AS OF OCTOBER, 1991

Dept/Unit	Faculty: Tenured	Total	X Tenured	Age 20-29	30-39	40-49	50-59	60+	A	Other:*		GTA	Tech	SRA	Sub Total	Student Suppt	Sub Ass't	TOTAL		
										P	P.doc									
SCIENCE:																				
Acad. Computing	0	0	MA	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	91	
Microbiology	7	8	87.50%	0	2	0	2	3	0	0	2	0	16	1	42	6	4	43	49	
Biological Sci	46	61	75.41%	2	15	20	11	13	0	0	4	13	6	27	119	11	33	7	39	
Anthropology	11	14	78.57%	0	3	3	6	2	0	0	0	6	2	5	11	2	1	3	224	
Chemistry	19	22	86.36%	1	3	4	10	4	2	0	11	0	7	20	88	9	14	3	28	
Economics	16	21	76.19%	1	4	4	4	1	0	0	0	18	0	0	18	3	11	23	133	
Entomology Mus	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	2	1	3	4	6	
Geography	9	15	60.00%	0	3	6	5	1	0	0	0	17	0	1	20	1	0	3	38	
Cartographic Lab	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Geology	12	16	75.00%	0	5	2	5	3	0	0	0	11	1	0	18	3	1	0	44	
Musm Inv Paleon	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Human Develop	19	21	90.48%	0	2	6	10	3	0	0	4	30	0	2	60	3	17	10	106	
Mathematics	30	37	81.08%	1	11	8	15	2	0	0	4	0	0	0	22	2	6	25	223	
Physics & Astrn	22	28	78.57%	0	5	9	5	2	0	0	3	1	3	6	18	5	8	12	99	
Psychology	25	35	71.43%	1	6	14	6	8	0	0	1	47	2	0	57	4	3	11	103	
Sociology	11	15	73.33%	0	2	11	5	9	0	0	5	12	0	0	12	3	11	14	41	
Computer Sci	7	13	53.85%	0	3	6	2	2	0	0	2	0	1	0	29	1	32	36	78	
Anthro Museum	1	1	100.00%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
Child Devel Lab	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Herbarium	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Musm Matrl Hist	0	0	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Pharm Chem	8	10	80.00%	0	5	0	0	2	0	0	1	1	2	15	29	4	27	31	60	
Pharmicol & Tox	6	7	85.71%	0	3	3	3	0	0	0	11	7	0	47	75	4	15	19	104	
Medicinal Chem	4	6	66.67%	0	2	2	3	0	0	0	0	10	2	29	40	2	5	7	20	
Biolog Survey	4	0	NA	0	0	0	0	0	0	0	3	0	0	8	17	2	15	34		
Paleontolog Inst	0	0	NA	0	0	0	0	0	0	0	1	0	0	1	6	0	11	6		
Bureau Child Res	0	0	NA	0	0	0	0	0	0	0	44	0	3	42	134	3	0	155		
Exp & Appl Ecol	0	0	NA	0	0	0	0	0	0	0	2	0	0	0	3	0	0	3		
KS Geolog Survey	0	0	NA	0	0	0	0	0	0	0	31	0	0	0	139	0	0	156		
Gerontology Ctr	0	0	NA	0	0	0	0	0	0	0	16	0	0	2	4	14	3	6		
Higuchi Cts Adm	0	0	NA	0	0	0	0	0	0	0	3	0	0	2	7	1	1	2	14	
Ctr Biomed Res	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	4	1	1	2	20	
Sci Instrum Lab	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	3	0	0	3		
Biochem Res Lab	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	4	0	0	4		
Mass Spec Lab	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1		
MHR Lab	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1		
Ct Drug Deliv	0	0	NA	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1		
Ct Bioanal Res	0	0	NA	0	0	0	0	0	0	0	4	0	0	2	7	0	3	8		
TOTAL	253	330	76.67%	2.12%	21.52%	33.33%	26.97%	16.06%	72	132	45	93	384	56	351	1133	120	402	522	1985
ENGINEERING:																				
Engineer/ingadn	2	2	100.00%	0	0	0	1	1	0	0	4	0	0	0	4	6	11	17	23	
Aerospace Eng	6	9	66.67%	0	2	1	2	4	0	0	0	0	0	0	7	1	3	4	26	
Architech Eng	2	2	100.00%	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
Chem & Petrol Eng	8	10	80.00%	0	3	2	3	2	0	0	0	9	2	0	9	2	6	8	27	
Civil Eng	19	21	90.48%	0	2	10	4	5	0	0	0	14	2	5	21	3	11	14	56	
Elec & Comp Eng	14	20	70.00%	1	6	5	4	4	0	0	2	0	3	1	18	3	10	13	51	
Eng Mgmt Prog	2	4	50.00%	0	1	0	2	1	0	0	0	0	0	0	0	1	0	1	5	

TABLE 2
TRENDS IN SCIENCE AND ENGINEERING FUNDING AT KU: AWARDS FOR RESEARCH AND EDUCATIONAL SERVICES

GROUP	Source	Fiscal Year:					1991* *Prelim.	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990				
Engineering	Research	\$3,037,676	\$2,909,692	\$2,410,762	\$3,926,108	\$2,802,660	\$18,011,364	14.48%	\$3,001,897	
	Education	\$214,480	\$62,965	\$31,800	\$62,000	\$119,482	\$512,325	0.41%	\$85,388	
	TOTAL	\$3,252,156	\$2,972,657	\$2,442,562	\$3,988,108	\$2,922,142	\$18,523,709	14.90%	\$3,087,285	
Biological Sciences	Research	\$1,568,020	\$2,159,143	\$3,278,482	\$1,797,408	\$2,175,092	\$13,885,797	11.17%	\$2,314,300	
	Education	\$47,000	\$2,000	\$12,000	\$1,194,540	\$2,434,854	\$3,791,105	3.05%	\$631,851	
	TOTAL	\$1,615,020	\$2,161,143	\$3,290,482	\$2,991,948	\$4,609,946	\$17,676,902	14.22%	\$2,946,150	
Behavioral Sciences	Research	\$2,843,744	\$4,289,921	\$3,682,172	\$5,809,581	\$4,059,604	\$4,528,897	20.28%	\$4,202,320	
	Education	\$1,301,162	\$2,066,670	\$2,660,548	\$1,234,188	\$360,629	\$1,277,162	7.16%	\$1,483,393	
	TOTAL	\$4,144,906	\$6,356,591	\$6,342,720	\$7,043,769	\$4,420,233	\$5,806,059	27.43%	\$5,685,713	
Geosciences	Research	\$1,336,578	\$391,654	\$846,809	\$891,038	\$657,208	\$5,153,270	4.14%	\$858,878	
	Education	\$0	\$4,900	\$0	\$428,340	\$0	\$433,240	0.35%	\$72,207	
	TOTAL	\$1,336,578	\$396,554	\$846,809	\$1,319,378	\$657,208	\$5,586,510	4.49%	\$931,085	
Pharmacy	Research	\$3,138,020	\$3,868,189	\$4,106,971	\$5,276,364	\$5,485,500	\$5,027,801	21.63%	\$4,483,808	
	Education	\$424,936	\$271,102	\$157,192	\$692,230	\$175,362	\$443,382	1.74%	\$360,701	
	TOTAL	\$3,562,956	\$4,139,291	\$4,264,163	\$5,968,594	\$5,660,862	\$5,471,183	23.37%	\$4,844,508	
Social Sciences	Research	\$59,275	\$226,005	\$50,333	\$111,838	\$148,271	\$74,853	0.54%	\$111,763	
	Education	\$1,460,593	\$734,432	\$200,880	\$69,458	\$110,000	\$27,300	2.09%	\$433,777	
	TOTAL	\$1,519,868	\$960,437	\$251,213	\$181,296	\$258,271	\$102,153	2.63%	\$545,540	
Physical Science	Research	\$1,494,118	\$1,647,133	\$1,585,658	\$1,833,649	\$2,359,805	\$2,639,913	9.30%	\$1,926,713	
	Education	\$11,500	\$13,600	\$36,600	\$62,200	\$41,992	\$113,608	0.22%	\$46,583	
	TOTAL	\$1,505,618	\$1,660,733	\$1,622,258	\$1,895,849	\$2,401,797	\$2,753,521	9.52%	\$1,973,296	
Math & Computer Sci	Research	\$271,600	\$237,899	\$60	\$70,057	\$11,508	\$593,624	0.48%	\$98,937	
	Education	\$0	\$0	\$0	\$0	\$25,234	\$25,234	0.02%	\$4,206	
	TOTAL	\$271,600	\$237,899	\$60	\$70,057	\$36,742	\$618,858	0.50%	\$103,143	
Business/Economics	Research	\$482,007	\$343,151	\$326,593	\$479,160	\$84,001	\$234,254	1.57%	\$324,861	
	Education	\$12,000	\$12,000	\$59,500	\$86,655	\$248,769	\$147,000	0.46%	\$94,321	
	TOTAL	\$494,007	\$355,151	\$386,093	\$565,815	\$332,770	\$381,254	2.02%	\$419,182	
Research Support/ RSGA/Grad School	Research	\$119,127	\$101,707	\$95,665	\$72,087	\$82,208	\$499,314	0.40%	\$83,219	
	Education	\$32,417	\$10,000	\$5,500	\$18,200	\$107,309	\$638,926	0.51%	\$106,488	
	TOTAL	\$151,544	\$111,707	\$101,165	\$90,287	\$189,517	\$1,138,240	0.92%	\$189,707	
S&E TOTALS	Research	\$14,350,165	\$16,174,494	\$16,383,505	\$20,267,290	\$17,865,857	\$19,398,859	83.99%	\$17,406,695	
	Education	\$3,504,088	\$3,177,669	\$3,164,020	\$3,847,811	\$3,623,631	\$2,596,261	16.01%	\$3,318,913	
	TOTAL	\$17,854,253	\$19,352,163	\$19,547,525	\$24,115,101	\$21,489,488	\$21,995,120		\$20,725,608	

CORRECTED FOR INFLATION

S&E TOTALS	Research	\$13,905,310	\$15,349,595	\$15,171,126	\$17,835,215	\$14,989,454	\$16,275,643
Education	\$3,395,461	\$3,015,608	\$2,929,883	\$3,386,074	\$3,040,226	\$2,178,263	
TOTAL	\$17,300,771	\$18,365,203	\$18,101,008	\$21,221,289	\$18,029,680	\$18,453,906	

Source: Derived from data provided by Research Support and Grants Administration, 1991

TABLE 3
TRENDS IN SCIENCE AND ENGINEERING FUNDING AT KU: AWARDS FOR RESEARCH AND EDUCATIONAL SERVICES

GROUP	Source	Fiscal Year:					TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990			
Engineering	Federal	\$2,270,244	\$2,012,854	\$1,163,346	\$2,039,434	\$1,535,450	\$9,943,058	53.68%	\$1,657,176
	State	\$308,239	\$264,123	\$508,188	\$778,771	\$599,099	\$3,670,995	19.82%	\$611,833
	University For Profit	\$35,587	\$119,994	\$258,406	\$177,950	\$189,000	\$986,371	4.79%	\$147,729
	Other	\$461,478	\$230,413	\$285,133	\$784,738	\$189,205	\$2,171,270	11.72%	\$361,878
TOTAL	\$3,252,156	\$2,972,657	\$2,442,562	\$3,988,108	\$2,922,142	\$18,523,709	10.00%	\$3,087,285	
Biological Sciences	Federal	\$1,170,354	\$1,924,205	\$2,582,217	\$1,366,197	\$4,146,601	\$13,128,269	74.27%	\$2,188,045
	State	\$74,419	\$62,000	\$43,197	\$58,332	\$65,478	\$532,277	3.01%	\$88,713
	University For Profit	\$10,000	\$0	\$0	\$0	\$1,600	\$11,600	0.07%	\$1,933
	Other	\$128,884	\$40,028	\$493,683	\$412,007	\$284,205	\$1,804,656	10.21%	\$300,776
TOTAL	\$1,615,020	\$2,161,143	\$3,290,482	\$2,991,948	\$4,609,946	\$17,676,902	12.45%	\$2,946,150	
Behavioral Sciences	Federal	\$3,666,443	\$6,150,027	\$5,953,103	\$6,290,613	\$4,144,754	\$31,434,311	92.14%	\$5,239,052
	State	\$318,504	\$83,023	\$253,350	\$230,423	\$105,000	\$1,105,300	3.24%	\$184,217
	University For Profit	\$0	\$0	\$0	\$28,676	\$27,537	\$75,966	0.22%	\$12,661
	Other	\$151,959	\$123,541	\$136,267	\$3,222	\$26,911	\$53,159	0.16%	\$8,860
TOTAL	\$4,144,906	\$6,356,591	\$6,342,720	\$7,043,769	\$4,420,233	\$34,114,278	4.24%	\$240,924	
Geosciences	Federal	\$1,168,148	\$208,415	\$726,163	\$971,035	\$256,591	\$3,977,527	71.20%	\$662,921
	State	\$148,030	\$78,700	\$63,719	\$48,861	\$165,897	\$648,580	11.61%	\$108,097
	University For Profit	\$7,000	\$50,000	\$13,432	\$31,610	\$87,012	\$268,532	4.81%	\$44,755
	Other	\$13,400	\$41,439	\$26,495	\$127,163	\$94,763	\$451,784	8.09%	\$75,297
TOTAL	\$1,336,578	\$396,554	\$846,809	\$1,319,378	\$657,208	\$5,586,510	4.30%	\$40,015	
Pharmacy	Federal	\$1,515,374	\$2,123,188	\$2,336,937	\$3,701,454	\$2,484,478	\$14,703,224	50.58%	\$2,450,537
	State	\$464,150	\$136,273	\$80,000	\$632,380	\$1,111,588	\$3,499,291	12.04%	\$583,215
	University For Profit	\$1,329,674	\$1,582,676	\$1,247,022	\$1,328,134	\$1,805,919	\$571,084	1.96%	\$95,181
	Other	\$253,758	\$297,154	\$303,909	\$291,955	\$231,112	\$8,576,870	29.51%	\$1,429,478
TOTAL	\$3,562,956	\$4,139,291	\$4,264,163	\$5,968,594	\$5,660,862	\$29,067,049	5.91%	\$286,097	
Social Science	Federal	\$1,467,312	\$862,523	\$200,880	\$103,035	\$175,844	\$2,855,365	87.23%	\$475,894
	State	\$1,574	\$10,000	\$0	\$42,761	\$25,379	\$101,714	3.11%	\$16,952
	University For Profit	\$14,468	\$0	\$0	\$0	\$0	\$14,468	0.44%	\$2,411
	Other	\$2,298	\$54,414	\$24,333	\$0	\$0	\$86,401	2.64%	\$14,400
TOTAL	\$1,519,868	\$960,437	\$251,213	\$181,296	\$258,271	\$3,273,238	6.58%	\$35,882	

*=Prelim

GROUP	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Physical Science	Federal	\$1,120,547	\$1,531,109	\$1,392,299	\$1,521,128	\$1,785,733	\$1,949,037	\$9,299,853	78.55%	\$1,549,976
	State	\$0	\$0	\$0	\$0	\$0	\$75,000	\$75,000	0.63%	\$12,500
	University	\$245,621	\$72,824	\$113,959	\$191,399	\$233,449	\$271,029	\$1,128,281	9.53%	\$188,047
	For Profit	\$19,000	\$2,000	\$37,000	\$72,000	\$314,800	\$365,628	\$810,428	6.84%	\$135,071
	Other	\$120,450	\$54,800	\$79,000	\$111,322	\$67,815	\$92,827	\$526,214	4.44%	\$87,702
	TOTAL	\$1,505,618	\$1,660,733	\$1,622,258	\$1,895,849	\$2,401,797	\$2,753,521	\$11,839,776		\$1,973,296
Math & Computer Sci	Federal	\$151,600	\$0	\$0	\$19,900	\$11,508	\$0	\$183,008	29.57%	\$30,501
	State	\$45,000	\$0	\$0	\$0	\$25,234	\$0	\$70,234	11.35%	\$11,706
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$75,000	\$77,899	\$60	\$50,157	\$0	\$2,500	\$205,616	33.23%	\$34,269
	Other	\$0	\$160,000	\$0	\$0	\$0	\$0	\$160,000	25.85%	\$26,667
	TOTAL	\$271,600	\$237,899	\$60	\$70,057	\$36,742	\$2,500	\$618,858		\$103,143
Business/Economics	Federal	\$127,472	\$173,841	\$21,500	\$208,290	\$235,769	\$116,000	\$882,872	35.10%	\$147,145
	State	\$278,623	\$110,246	\$38,999	\$232,370	\$25,854	\$210,198	\$896,290	35.64%	\$149,382
	University	\$39,262	\$0	\$56,989	\$77,055	\$3,750	\$0	\$177,056	7.04%	\$29,509
	For Profit	\$36,650	\$54,564	\$45,261	\$40,819	\$40,819	\$30,056	\$207,350	8.24%	\$34,558
	Other	\$12,000	\$16,500	\$223,344	\$48,100	\$26,578	\$25,000	\$351,522	13.98%	\$58,587
	TOTAL	\$494,007	\$355,151	\$386,093	\$565,815	\$332,770	\$381,254	\$2,515,090		\$419,182
Research Support/ RSGA/Grad School	Federal	\$119,127	\$101,707	\$92,194	\$72,087	\$82,208	\$428,520	\$895,843	84.88%	\$149,307
	State	\$0	\$0	\$3,471	\$0	\$0	\$0	\$3,471	0.33%	\$579
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$32,417	\$10,000	\$5,500	\$18,200	\$24,500	\$65,500	\$156,117	14.79%	\$26,020
	Other	\$151,544	\$111,707	\$101,165	\$90,287	\$106,708	\$494,020	\$1,055,431		\$175,905
	TOTAL	\$178,108	\$123,414	\$204,364	\$180,574	\$213,416	\$993,540	\$2,110,762		\$270,811
KU SUBTOTALS	Federal	\$12,776,621	\$15,087,869	\$14,448,639	\$16,293,173	\$14,858,936	\$13,838,092	\$87,303,330	70.25%	\$14,550,555
	State	\$1,638,539	\$744,365	\$990,924	\$2,023,898	\$2,123,529	\$3,081,897	\$10,603,152	8.53%	\$1,767,192
	University	\$351,938	\$242,818	\$739,081	\$521,361	\$491,113	\$787,047	\$3,133,358	2.52%	\$522,226
	For Profit	\$2,074,384	\$2,083,433	\$2,158,987	\$2,777,421	\$2,756,622	\$2,516,687	\$14,367,534	11.56%	\$2,394,589
	Other	\$1,012,771	\$1,193,678	\$1,209,894	\$2,499,248	\$1,176,479	\$1,771,397	\$8,863,467	7.13%	\$1,477,245
	TOTAL	\$17,854,253	\$19,352,163	\$19,547,525	\$24,115,101	\$21,406,679	\$21,995,120	\$124,270,841		\$20,711,807

Source: Derived from data provided by Research Support and Grants Administration, 1991

TABLE 4
TRENDS IN SCIENCE AND ENGINEERING FUNDING AT KU: AWARDS FOR RESEARCH

GROUP	Source	Fiscal Year:					TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990			
Engineering	Federal	\$2,110,764	\$1,949,889	\$1,121,546	\$2,002,434	\$1,438,452	\$9,543,217	52.98%	\$1,590,536
	State	\$308,239	\$264,123	\$508,188	\$778,771	\$599,099	\$3,670,995	20.38%	\$611,833
	University	\$35,587	\$119,994	\$258,406	\$177,950	\$110,000	\$886,371	4.92%	\$147,729
	For Profit	\$461,478	\$230,413	\$275,133	\$759,738	\$189,205	\$2,136,270	11.86%	\$356,045
	Other	\$121,608	\$345,273	\$247,489	\$207,215	\$465,904	\$1,774,531	9.85%	\$295,755
TOTAL	\$3,037,676	\$2,909,692	\$2,410,762	\$3,926,108	\$2,802,660	\$18,011,384		\$3,001,897	
Biological Sciences	Federal	\$1,170,354	\$1,924,205	\$2,582,217	\$1,181,457	\$1,711,747	\$10,424,019	75.07%	\$1,737,337
	State	\$74,419	\$62,000	\$43,197	\$58,332	\$65,478	\$532,277	3.83%	\$88,713
	University	\$10,000	\$0	\$0	\$0	\$1,600	\$11,600	0.08%	\$1,933
	For Profit	\$128,884	\$40,028	\$493,683	\$412,007	\$284,205	\$1,804,656	13.00%	\$300,776
	Other	\$184,363	\$132,910	\$159,385	\$145,612	\$112,062	\$1,113,245	8.02%	\$185,541
TOTAL	\$1,568,020	\$2,159,143	\$3,278,482	\$1,797,408	\$2,175,092	\$13,885,797		\$2,314,300	
Behavioral Sciences	Federal	\$2,737,672	\$4,237,526	\$3,615,969	\$5,432,031	\$3,889,975	\$24,131,625	95.71%	\$4,021,938
	State	\$20,000	\$6,994	\$0	\$9,887	\$0	\$46,881	0.19%	\$7,814
	University	\$0	\$0	\$0	\$28,676	\$27,537	\$75,966	0.30%	\$12,661
	For Profit	\$8,000	\$0	\$0	\$3,222	\$26,911	\$53,159	0.21%	\$8,860
	Other	\$78,072	\$45,401	\$66,203	\$335,765	\$115,181	\$906,288	3.59%	\$151,048
TOTAL	\$2,843,744	\$4,289,921	\$3,682,172	\$5,809,581	\$4,059,604	\$25,213,919		\$4,202,320	
Geosciences	Federal	\$1,168,148	\$208,415	\$726,163	\$542,695	\$256,591	\$3,549,187	68.87%	\$591,531
	State	\$148,030	\$78,700	\$63,719	\$48,861	\$165,897	\$648,580	12.59%	\$108,097
	University	\$7,000	\$50,000	\$13,432	\$31,610	\$87,012	\$268,532	5.21%	\$44,755
	For Profit	\$13,400	\$36,539	\$26,495	\$127,163	\$94,763	\$446,884	8.67%	\$74,481
	Other	\$0	\$18,000	\$17,000	\$140,709	\$52,945	\$240,087	4.66%	\$40,015
TOTAL	\$1,336,578	\$391,654	\$846,809	\$891,038	\$657,208	\$5,153,270		\$858,878	
Pharmacy	Federal	\$1,227,842	\$1,943,321	\$2,194,745	\$3,079,258	\$2,377,576	\$12,975,153	48.23%	\$2,162,526
	State	\$464,150	\$136,273	\$80,000	\$632,380	\$1,111,588	\$3,499,291	13.01%	\$583,215
	University	\$0	\$0	\$296,295	\$14,671	\$27,765	\$332,353	2.12%	\$95,181
	For Profit	\$1,223,940	\$1,560,995	\$1,247,022	\$1,303,134	\$1,805,919	\$8,399,455	31.22%	\$1,399,909
	Other	\$222,088	\$227,600	\$288,909	\$246,921	\$162,652	\$1,457,862	5.42%	\$242,977
TOTAL	\$3,138,020	\$3,868,189	\$4,106,971	\$5,276,364	\$5,485,500	\$26,902,845		\$4,483,808	
Social Science	Federal	\$27,735	\$135,591	\$0	\$35,714	\$80,844	\$325,655	48.56%	\$54,276
	State	\$1,574	\$10,000	\$0	\$40,624	\$25,379	\$97,577	14.55%	\$16,263
	University	\$14,468	\$0	\$0	\$0	\$0	\$14,468	2.16%	\$2,411
	For Profit	\$2,298	\$54,414	\$24,333	\$0	\$0	\$86,401	12.88%	\$14,400
	Other	\$13,200	\$26,000	\$26,000	\$35,500	\$42,048	\$146,474	21.84%	\$24,412
TOTAL	\$59,275	\$226,005	\$50,333	\$111,838	\$148,271	\$670,575		\$111,763	

*=Prelim

GROUP	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Physical Science	Federal	\$1,120,547	\$1,531,109	\$1,392,299	\$1,470,528	\$1,766,941	\$1,835,429	\$9,116,853	78.86%	\$1,519,476
	State	\$0	\$0	\$0	\$0	\$0	\$75,000	\$75,000	0.65%	\$12,500
	University	\$245,621	\$72,824	\$113,959	\$191,399	\$233,449	\$271,029	\$1,128,281	9.76%	\$188,047
	For Profit	\$19,000	\$2,000	\$12,000	\$72,000	\$314,800	\$365,628	\$785,428	6.79%	\$130,905
	Other	\$108,950	\$41,200	\$67,400	\$99,722	\$44,615	\$92,827	\$454,714	3.93%	\$75,786
	TOTAL	\$1,494,118	\$1,647,133	\$1,585,658	\$1,833,649	\$2,359,805	\$2,639,913	\$11,560,276		\$1,926,713
Math & Computer Sci	Federal	\$151,600	\$0	\$0	\$19,900	\$11,508	\$0	\$183,008	30.83%	\$30,501
	State	\$45,000	\$0	\$0	\$0	\$0	\$0	\$45,000	7.58%	\$7,500
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$75,000	\$77,899	\$60	\$50,157	\$0	\$2,500	\$205,616	34.64%	\$34,269
	Other	\$0	\$160,000	\$0	\$0	\$0	\$0	\$160,000	26.95%	\$26,667
	TOTAL	\$271,600	\$237,899	\$60	\$70,057	\$11,508	\$2,500	\$593,624		\$98,937
Business/Economics	Federal	\$115,472	\$161,841	\$9,500	\$198,690	\$0	\$4,000	\$489,503	25.11%	\$81,584
	State	\$278,623	\$110,246	\$38,999	\$232,370	\$17,854	\$175,198	\$853,290	43.78%	\$142,215
	University	\$39,262	\$0	\$9,489	\$0	\$3,750	\$0	\$52,501	2.69%	\$8,750
	For Profit	\$36,650	\$54,564	\$45,261	\$0	\$40,819	\$30,056	\$207,350	10.64%	\$34,558
	Other	\$12,000	\$16,500	\$223,344	\$48,100	\$21,578	\$25,000	\$346,522	17.78%	\$57,754
	TOTAL	\$482,007	\$343,151	\$326,593	\$479,160	\$84,001	\$234,254	\$1,949,166		\$324,861
Research Support/ RSGA	Federal	\$119,127	\$101,707	\$92,194	\$72,087	\$82,208	\$28,520	\$495,843	99.30%	\$82,641
	State	\$0	\$0	\$3,471	\$0	\$0	\$0	\$3,471	0.70%	\$579
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	TOTAL	\$119,127	\$101,707	\$95,665	\$72,087	\$82,208	\$28,520	\$499,314		\$83,219
KU SUBTOTALS	Federal	\$9,949,261	\$12,193,604	\$11,734,633	\$14,034,794	\$11,615,842	\$11,705,929	\$71,234,063	68.21%	\$11,872,344
	State	\$1,340,035	\$668,336	\$737,574	\$1,801,225	\$1,985,295	\$2,939,897	\$9,472,362	9.07%	\$1,578,727
	University	\$351,938	\$242,818	\$691,581	\$444,306	\$491,113	\$787,047	\$3,008,803	2.88%	\$501,467
	For Profit	\$1,968,650	\$2,056,852	\$2,123,987	\$2,727,421	\$2,756,622	\$2,491,687	\$14,125,219	13.52%	\$2,354,203
	Other	\$740,281	\$1,012,884	\$1,095,730	\$1,259,544	\$1,016,985	\$1,474,299	\$6,599,723	6.32%	\$1,099,954
	TOTAL	\$14,350,165	\$16,174,494	\$16,383,505	\$20,267,290	\$17,865,857	\$19,398,859	\$104,440,170		\$17,406,695

TABLE 5
TRENDS IN ENGINEERING FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:					TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990			
Aerospace Eng	Federal	\$359,044	\$398,640	\$18,500	\$253,484	\$299,066	\$1,612,814	60.09%	
	State	\$0	\$0	\$239,925	\$27,268	\$0	\$267,193	9.96%	
	University For Profit	\$0	\$0	\$0	\$2,093	\$0	\$52,093	1.94%	
	Other	\$95,085	\$27,039	\$56,633	\$208,081	\$35,000	\$446,411	16.63%	
	TOTAL	\$454,129	\$425,679	\$358,180	\$535,894	\$460,342	\$2,683,928	11.38%	\$447,321
Architec. Eng.	Federal	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	100.00%	\$16,429
CRINC-Remote Sensing	Federal	\$0	\$558,459	\$0	\$0	\$0	\$602,105	79.73%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University For Profit	\$0	\$0	\$0	\$153,068	\$0	\$153,068	20.27%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$558,459	\$0	\$153,068	\$0	\$755,173	0.00%	\$125,862
Chem & Petrol Eng	Federal	\$0	\$0	\$0	\$208,617	\$0	\$208,617	59.09%	
	State	\$0	\$0	\$0	\$0	\$10,000	\$10,000	2.83%	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$30,000	\$12,650	\$11,981	\$56,812	\$0	\$134,408	38.07%	
	TOTAL	\$30,000	\$12,650	\$11,981	\$265,429	\$10,000	\$353,025	0.00%	\$58,838
Civil Engineering	Federal	\$185,903	\$397,413	\$288,576	\$228,408	\$265,297	\$1,660,760	58.66%	
	State	\$50,000	\$18,000	\$18,890	\$9,716	\$38,466	\$294,069	10.39%	
	University For Profit	\$10,923	\$0	\$54,000	\$0	\$0	\$88,923	3.14%	
	Other	\$75,000	\$18,895	\$37,235	\$87,500	\$65,036	\$328,465	11.60%	
	TOTAL	\$321,826	\$577,307	\$438,701	\$370,624	\$449,525	\$2,830,942	16.20%	\$471,824
Elec & Computer Eng	Federal	\$824,339	\$0	\$584,253	\$1,117,807	\$580,332	\$3,393,012	61.86%	
	State	\$0	\$0	\$12,849	\$163,487	\$87,885	\$732,396	13.35%	
	University For Profit	\$24,664	\$73,995	\$38,338	\$22,789	\$110,000	\$350,125	6.38%	
	Other	\$184,953	\$133,600	\$134,284	\$305,527	\$44,169	\$897,686	16.37%	
	TOTAL	\$1,045,960	\$207,595	\$779,723	\$1,609,610	\$890,523	\$5,485,359	2.04%	\$914,227
Energy Research Ctr	Federal	\$0	\$0	\$0	\$0	\$0	\$10,962	100.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$0	\$0	\$0	\$10,962	0.00%	\$5,481

*=Prelim

KsApplied Remote SenFederal												
State	\$0	\$160,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160,000	41.72%
University	\$0	\$45,999	\$11,450	\$166,068	\$0	\$0	\$0	\$0	\$0	\$0	\$11,450	2.99%
For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$212,067	55.30%
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
TOTAL	\$0	\$205,999	\$177,518	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$383,517	0.00%
Mechanical Eng												
Federal	\$396,370	\$431,377	\$228,577	\$194,118	\$293,757	\$0	\$10,404	\$0	\$1,544,199	\$0	\$1,544,199	57.96%
State	\$7,626	\$0	\$0	\$130,000	\$10,000	\$0	\$0	\$0	\$158,030	\$0	\$158,030	5.93%
University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
For Profit	\$76,440	\$22,001	\$35,000	\$93,539	\$45,000	\$32,813	\$304,793	\$0	\$657,305	\$0	\$657,305	11.44%
Other	\$90,000	\$158,745	\$144,368	\$91,075	\$173,117	\$43,217	\$2,664,327	\$0	\$0	\$0	\$0	24.67%
TOTAL	\$570,436	\$612,123	\$407,945	\$508,732	\$521,874	\$0	\$0	\$0	\$2,664,327	\$0	\$2,664,327	\$444,055
Tertiary Oil Recov												
Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
For Profit	\$0	\$16,228	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,228	\$0	100.00%
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
TOTAL	\$0	\$16,228	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,228	\$0	\$2,705
Transport..Res.Ctr.												
Federal	\$81,444	\$194,123	\$225,074	\$398,351	\$452,748	\$0	\$532,099	\$1,903,014	\$81,444	\$0	\$81,444	3.78%
State	\$100,619	\$0	\$0	\$8,279	\$0	\$0	\$30,095	\$0	\$30,095	\$0	\$30,095	88.30%
University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1.40%
For Profit	\$19,604	\$43,529	\$0	\$26,172	\$17,648	\$25,416	\$132,369	\$0	\$8,279	\$0	\$8,279	0.38%
Other	\$201,667	\$237,652	\$225,074	\$432,802	\$470,596	\$587,610	\$2,155,201	\$0	\$0	\$0	\$0	6.14%
TOTAL	\$192,060	\$149,994	\$0	\$0	\$0	\$0	\$0	\$0	\$192,060	\$0	\$192,060	54.55%
State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	42.61%
University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
Other	\$342,054	\$0	\$10,000	\$0	\$0	\$0	\$0	\$0	\$10,000	\$0	\$10,000	2.84%
TOTAL	\$71,604	\$56,000	\$1,640	\$49,949	\$0	\$0	\$0	\$0	\$42,900	\$0	\$42,900	34.78%
Water Resources InstFederal												
State	\$0	\$52,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	65.22%
University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%
TOTAL	\$71,604	\$56,000	\$1,640	\$49,949	\$0	\$0	\$0	\$0	\$42,900	\$0	\$42,900	34.78%
ENGINEERING TOTAL												
Federal	\$2,110,764	\$1,949,889	\$1,121,546	\$2,002,434	\$1,438,452	\$920,132	\$9,543,217	\$0	\$9,543,217	\$0	\$9,543,217	52.98%
State	\$308,239	\$264,123	\$508,188	\$778,771	\$599,099	\$1,212,575	\$3,670,995	\$0	\$3,670,995	\$0	\$3,670,995	20.38%
University	\$35,587	\$119,994	\$258,406	\$177,950	\$110,000	\$184,434	\$886,371	\$0	\$886,371	\$0	\$886,371	4.92%
For Profit	\$461,478	\$230,413	\$275,133	\$759,738	\$189,205	\$220,303	\$2,136,270	\$0	\$2,136,270	\$0	\$2,136,270	11.86%
Other	\$121,608	\$345,273	\$247,489	\$207,215	\$465,904	\$387,042	\$1,774,531	\$0	\$1,774,531	\$0	\$1,774,531	9.85%
TOTAL	\$3,037,676	\$2,909,692	\$2,410,762	\$3,926,108	\$2,802,660	\$2,924,486	\$18,011,384	\$0	\$18,011,384	\$0	\$18,011,384	\$3,001,897

TABLE 6
TRENDS IN BIOLOGICAL SCIENCES FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:					1991* *Prelim	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990				
Animal Care Unit	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$33,000	100.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$33,000		\$5,500	
BioSci-Biochemistry	Federal	\$0	\$680,638	\$606,072	\$309,133	\$247,332	\$310,360	\$2,153,535	76.01%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$86,000	\$12,028	\$51,802	\$9,115	\$50,000	\$0	\$5,000	0.18%	
	Other	\$127,763	\$91,000	\$129,493	\$129,493	\$0	\$117,352	\$208,945	7.38%	
TOTAL	\$218,763	\$783,666	\$657,874	\$447,741	\$297,332	\$427,712	\$2,833,088	16.43%	\$472,181	
BioSci-Botany	Federal	\$517,004	\$4,000	\$171,238	\$0	\$186,000	\$0	\$878,242	98.82%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$4,220	\$0	\$0	\$6,250	\$6,250	0.70%	
TOTAL	\$517,004	\$4,000	\$175,458	\$0	\$186,000	\$6,250	\$888,712	0.47%	\$148,119	
BioSci-Entomology	Federal	\$0	\$106,283	\$40,000	\$455,262	\$0	\$26,709	\$628,254	88.50%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$4,220	\$9,928	\$0	\$71,717	\$81,645	11.50%	
TOTAL	\$0	\$106,283	\$40,000	\$465,190	\$0	\$98,426	\$709,899		\$118,317	
BioSci-Environ.St.	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$1,600	\$109,880	\$109,880	98.56%	
TOTAL	\$0	\$0	\$0	\$0	\$1,600	\$109,880	\$1,600	1.44%		
BioSci-P&Cell Biol	Federal	\$0	\$295,758	\$552,598	\$0	\$586,307	\$121,870	\$1,556,533	82.12%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$56,600	\$21,200	\$60,165	\$0	\$75,000	\$125,844	\$75,000	3.96%	
TOTAL	\$56,600	\$316,958	\$612,763	\$0	\$661,307	\$247,714	\$1,895,342	13.92%		
BioSci-Syst & Ecol	Federal	\$49,295	\$71,762	\$312,415	\$130,382	\$180,746	\$0	\$744,600	60.67%	
	State	\$0	\$0	\$13,335	\$0	\$0	\$0	\$13,335	1.09%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$39,851	\$28,000	\$95,000	\$78,318	\$52,157	\$111,985	\$310,311	25.29%	
	Other	\$0	\$0	\$420,750	\$208,700	\$232,903	\$64,000	\$159,000	12.96%	
TOTAL	\$89,146	\$99,762	\$420,750	\$208,700	\$232,903	\$175,985	\$1,227,246		\$204,541	

Enzyme Labs	Federal State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$45,868	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	100.00%	\$7,645
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$45,868	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$7,645
Entomol Museum	Federal State	\$0	\$0	\$172,975	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	100.00%	\$28,829
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$172,975	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$28,829
Microbiology	Federal State	\$357,125	\$404,644	\$298,565	\$188,262	\$284,878	\$113,076	\$1,646,550	\$10,270	\$0	\$0	\$0	\$0	\$0	81.00%	\$338,786
	University	\$5,000	\$0	\$0	\$10,270	\$0	\$0	\$0	\$10,270	\$0	\$0	\$0	\$0	\$0	0.51%	
	For Profit	\$0	\$0	\$170,000	\$0	\$0	\$0	\$3,500	\$5,000	\$0	\$0	\$0	\$0	\$0	0.25%	
	Other	\$0	\$0	\$0	\$1,000	\$97,048	\$3,500	\$270,548	\$0	\$0	\$0	\$0	\$0	\$0	13.31%	
	TOTAL	\$362,125	\$404,644	\$468,565	\$199,532	\$481,274	\$116,576	\$2,032,716	\$100,348	\$0	\$0	\$0	\$0	\$0	4.94%	\$338,786
Museum Matr Hist	Federal State	\$236,944	\$292,002	\$428,354	\$69,023	\$208,741	\$0	\$1,235,064	\$0	\$0	\$0	\$0	\$0	\$0	97.50%	\$211,129
	University	\$11,000	\$0	\$0	\$0	\$0	\$0	\$11,000	\$0	\$0	\$0	\$0	\$0	\$0	0.87%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$247,944	\$312,712	\$428,354	\$69,023	\$208,741	\$0	\$1,266,774	\$20,710	\$0	\$0	\$0	\$0	\$0	1.63%	\$211,129
KS Biological Svy	Federal State	\$9,986	\$69,118	\$0	\$29,395	\$17,743	\$1,282,024	\$1,408,266	\$0	\$0	\$0	\$0	\$0	\$0	52.77%	\$444,783
	University	\$63,419	\$62,000	\$29,862	\$2,194	\$32,478	\$118,971	\$308,924	\$0	\$0	\$0	\$0	\$0	\$0	11.58%	
	For Profit	\$3,033	\$0	\$271,881	\$324,574	\$10,000	\$324,114	\$933,602	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$5,191	\$12,714	\$0	\$17,905	\$0	\$0	\$0	\$0	\$0	\$0	34.98%	
	TOTAL	\$76,438	\$131,118	\$301,743	\$361,354	\$72,935	\$1,725,109	\$2,668,697	\$0	\$0	\$0	\$0	\$0	\$0	0.67%	\$444,783
BIOLOGICAL SCIENCES SUBTOTAL	Federal State	\$1,170,354	\$1,924,205	\$2,582,217	\$1,181,457	\$1,711,747	\$1,854,039	\$10,424,019	\$0	\$0	\$0	\$0	\$0	\$0	75.07%	\$2,314,300
	University	\$74,419	\$62,000	\$43,197	\$58,332	\$65,478	\$228,851	\$532,277	\$0	\$0	\$0	\$0	\$0	\$0	3.83%	
	For Profit	\$128,884	\$40,028	\$493,683	\$412,007	\$284,205	\$445,849	\$1,804,656	\$0	\$0	\$0	\$0	\$0	\$0	0.08%	
	Other	\$184,363	\$132,910	\$159,385	\$145,612	\$112,062	\$378,913	\$1,113,245	\$0	\$0	\$0	\$0	\$0	\$0	13.00%	
	TOTAL	\$1,568,020	\$2,159,143	\$3,278,482	\$1,797,408	\$2,175,092	\$2,907,652	\$13,885,797	\$0	\$0	\$0	\$0	\$0	\$0	8.02%	\$2,314,300

TABLE 7
TRENDS IN BEHAVIORAL SCIENCE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:					TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990			
Bureau of Child Res	Federal	\$2,737,672	\$3,480,024	\$3,615,969	\$5,116,433	\$3,725,494	\$3,777,966	98.46%	
	State	\$20,000	\$6,994	\$0	\$9,887	\$0	\$10,000	0.21%	\$46,881
	University	\$0	\$0	\$0	\$0	\$0	\$19,753	0.09%	\$19,753
	For Profit	\$0	\$0	\$0	\$0	\$5,000	\$0	0.02%	\$5,000
	Other	\$56,872	\$45,401	\$40,003	\$23,048	\$99,897	\$14,852	1.23%	\$280,073
TOTAL	\$2,814,544	\$3,532,419	\$3,655,972	\$5,149,368	\$3,830,391	\$3,822,571		\$3,800,878	
Human Development	Federal	\$0	\$718,979	\$0	\$242,530	\$164,481	\$440,486	71.18%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$8,000	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$21,200	\$0	\$26,200	\$312,717	\$15,284	\$250,814	0.36%	\$8,000
TOTAL	\$29,200	\$718,979	\$26,200	\$555,247	\$179,765	\$691,300	28.46%	\$366,782	
Psychology	Federal	\$0	\$38,523	\$0	\$73,068	\$0	\$0	53.66%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$28,676	\$27,537	\$0	27.03%	\$56,213
	For Profit	\$0	\$0	\$0	\$3,222	\$21,911	\$15,026	19.31%	\$40,159
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$0	\$38,523	\$0	\$104,966	\$49,448	\$15,026		\$34,661	
BEHAVIORAL SCIENCE TOTAL	Federal	\$2,737,672	\$4,237,526	\$3,615,969	\$5,432,031	\$3,889,975	\$4,218,452	95.71%	
	State	\$20,000	\$6,994	\$0	\$9,887	\$0	\$10,000	0.19%	\$46,881
	University	\$0	\$0	\$0	\$28,676	\$27,537	\$19,753	0.30%	\$75,966
	For Profit	\$8,000	\$0	\$0	\$3,222	\$26,911	\$15,026	0.21%	\$53,159
	Other	\$78,072	\$45,401	\$66,203	\$335,765	\$115,181	\$265,666	3.59%	\$906,288
SOCIAL SCIENCE TOTAL:		\$2,843,744	\$4,289,921	\$3,682,172	\$5,809,581	\$4,059,604		\$4,202,320	

*=Prelim

TABLE 8
TRENDS IN GEOSCIENCE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	1986	1987	1988	1989	1990	1991*	TOTAL	% of TOTAL	YR. MEAN
Geography	Federal	\$34,500	\$0	\$0	\$215,988	\$0	\$0	\$250,488	76.44%	
	State	\$11,700	\$0	\$0	\$11,000	\$14,230	\$24,374	\$61,304	18.71%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$5,400	\$0	\$0	\$0	\$0	\$7,500	\$12,900	3.94%	
	Other	\$0	\$0	\$0	\$0	\$0	\$3,000	\$3,000	0.92%	\$54,615
TOTAL	\$51,600	\$0	\$0	\$226,988	\$14,230	\$34,874	\$327,692			
Geology	Federal	\$985,541	\$145,704	\$623,432	\$74,422	\$157,295	\$192,910	\$2,179,304	86.20%	
	State	\$5,330	\$0	\$0	\$0	\$0	\$12,087	\$17,417	0.69%	
	University	\$7,000	\$0	\$13,432	\$27,610	\$0	\$34,478	\$82,520	3.26%	
	For Profit	\$8,000	\$0	\$0	\$0	\$5,000	\$68,077	\$81,077	3.21%	
	Other	\$0	\$18,000	\$17,000	\$91,370	\$33,445	\$8,000	\$167,815	6.64%	\$421,356
TOTAL	\$1,005,871	\$163,704	\$653,864	\$193,402	\$195,740	\$315,552	\$2,528,133			
KS Geological Survey	Federal	\$148,107	\$62,711	\$102,731	\$252,285	\$99,296	\$454,265	\$1,119,395	48.72%	
	State	\$131,000	\$78,700	\$63,719	\$37,861	\$151,667	\$106,912	\$569,859	24.80%	
	University	\$0	\$50,000	\$0	\$4,000	\$87,012	\$45,000	\$186,012	8.10%	
	For Profit	\$0	\$36,539	\$26,495	\$127,163	\$89,763	\$72,947	\$352,907	15.36%	
	Other	\$0	\$0	\$0	\$49,339	\$19,500	\$433	\$69,272	3.02%	\$382,908
TOTAL	\$279,107	\$227,950	\$192,945	\$470,648	\$447,238	\$679,557	\$2,297,445			
GEOSCIENCES TOTAL	Federal	\$1,168,148	\$208,415	\$726,163	\$542,695	\$256,591	\$647,175	\$3,549,187	68.87%	
	State	\$148,030	\$78,700	\$63,719	\$48,861	\$165,897	\$143,373	\$648,580	12.59%	
	University	\$7,000	\$50,000	\$13,432	\$31,610	\$87,012	\$79,478	\$268,532	5.21%	
	For Profit	\$13,400	\$36,539	\$26,495	\$127,163	\$94,763	\$148,524	\$446,884	8.67%	
	Other	\$0	\$18,000	\$17,000	\$140,709	\$52,945	\$11,433	\$240,087	4.66%	
GEOLOGICAL SCIENCE TOTAL:		\$1,336,578	\$391,654	\$846,809	\$891,038	\$657,208	\$1,029,983	\$5,153,270		\$858,878

TABLE 9

TRENDS IN PHARMACY FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Medic Chemistry	Federal	\$565,287	\$489,443	\$924,209	\$1,377,574	\$930,969	\$1,083,550	\$5,371,032	81.14%	
	State	\$52,150	\$0	\$0	\$0	\$0	\$0	\$52,150	0.79%	
	University	\$0	\$0	\$296,295	\$2,871	\$0	\$0	\$299,166	4.52%	
	For Profit	\$39,810	\$106,434	\$0	\$93,172	\$90,013	\$139,110	\$468,539	7.08%	
	Other	\$33,000	\$63,600	\$75,735	\$74,650	\$83,176	\$98,310	\$428,471	6.47%	
TOTAL	\$690,247	\$659,477	\$1,296,239	\$1,548,267	\$1,104,158	\$1,320,970	\$6,619,358		\$1,103,226	
Pharm & Toxicology	Federal	\$0	\$155,506	\$149,551	\$120,253	\$50,918	\$253,769	\$729,997	55.47%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$43,074	\$88,912	\$0	\$0	\$0	\$131,986	10.03%	
	Other	\$65,126	\$88,600	\$75,519	\$47,370	\$26,200	\$151,320	\$454,135	34.51%	\$219,353
TOTAL	\$65,126	\$287,180	\$313,982	\$167,623	\$77,118	\$405,089	\$1,316,118			
Pharm Chemistry	Federal	\$219,925	\$1,053,341	\$536,066	\$789,566	\$699,098	\$362,475	\$3,660,471	34.85%	
	State	\$108,000	\$136,273	\$0	\$32,880	\$0	\$0	\$277,153	2.64%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$783,130	\$1,291,487	\$984,557	\$946,604	\$1,094,103	\$1,069,335	\$6,169,216	58.74%	
	Other	\$87,922	\$75,400	\$66,077	\$94,501	\$41,391	\$30,500	\$395,791	3.77%	\$1,750,439
TOTAL	\$1,198,977	\$2,556,501	\$1,586,700	\$1,863,551	\$1,834,592	\$1,462,310	\$10,502,631			
Ctr Bioanal Res	Federal	\$0	\$0	\$68,810	\$214,088	\$0	\$94,250	\$377,148	11.08%	
	State	\$244,000	\$0	\$80,000	\$445,000	\$392,817	\$32,540	\$1,554,357	45.66%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1.03%	
	For Profit	\$366,000	\$120,000	\$173,553	\$263,358	\$515,117	\$0	\$1,438,028	42.24%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$610,000	\$120,000	\$322,363	\$922,446	\$907,934	\$521,790	\$3,404,533		\$567,422	
Higuchi Biosciences	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$154,500	\$718,771	\$682,360	\$1,555,631	95.11%	
	University	\$0	\$0	\$0	\$0	\$0	\$9,951	\$9,951	0.61%	
	For Profit	\$0	\$0	\$0	\$0	\$19,995	\$50,000	\$69,995	4.28%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$0	\$0	\$0	\$154,500	\$738,766	\$742,311	\$1,635,577		\$545,192	
Biomed Research Ctr	Federal	\$442,630	\$245,031	\$516,109	\$577,777	\$696,591	\$358,367	\$2,836,505	82.83%	
	State	\$60,000	\$0	\$0	\$0	\$0	\$0	\$60,000	1.75%	
	University	\$0	\$0	\$0	\$11,800	\$27,765	\$187,402	\$226,967	6.63%	
	For Profit	\$35,000	\$0	\$0	\$0	\$86,691	\$0	\$121,691	3.55%	
	Other	\$36,040	\$0	\$71,578	\$30,400	\$11,885	\$29,562	\$179,465	5.24%	
TOTAL	\$573,670	\$245,031	\$587,687	\$619,977	\$822,932	\$575,331	\$3,424,628		\$570,771	
PHARMACY TOTAL	Federal	\$1,227,842	\$1,943,321	\$2,194,745	\$3,079,258	\$2,377,576	\$2,152,411	\$12,975,153	48.23%	
	State	\$464,150	\$136,273	\$80,000	\$632,380	\$1,111,588	\$1,074,900	\$3,499,291	13.01%	
	University	\$0	\$0	\$0	\$14,671	\$27,765	\$232,353	\$571,084	2.12%	
	For Profit	\$1,223,940	\$1,560,995	\$1,247,022	\$1,303,134	\$1,805,919	\$1,258,445	\$8,399,455	31.22%	
	Other	\$222,088	\$227,600	\$288,909	\$246,921	\$162,652	\$309,692	\$1,457,862	5.42%	
PHARMACY TOTAL:	\$3,138,020	\$3,868,189	\$4,106,971	\$5,276,364	\$5,485,500	\$5,027,801	\$26,902,845		\$4,483,808	

TABLE 10

TRENDS IN PHYSICAL SCIENCE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:					1991*	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990				
Physics & Astronomy	Federal	\$404,351	\$426,512	\$360,134	\$715,476	\$716,449	\$595,872	\$3,218,794	68.95%	
	State	\$0	\$0	\$0	\$0	\$0	\$75,000	\$75,000	1.61%	
	University	\$245,621	\$50,000	\$113,959	\$149,338	\$197,250	\$233,896	\$990,064	21.21%	
	For Profit	\$0	\$2,000	\$0	\$0	\$0	\$274,725	\$376,725	8.07%	
	Other	\$0	\$0	\$8,000	\$0	\$0	\$0	\$8,000	0.17%	\$778,097
TOTAL	\$649,972	\$478,512	\$482,093	\$864,814	\$1,013,699	\$1,179,493	\$4,668,583			
Chemistry	Federal	\$716,196	\$1,104,597	\$1,032,165	\$755,052	\$1,050,492	\$1,239,557	\$5,898,059	85.58%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$19,000	\$22,824	\$0	\$42,061	\$36,199	\$37,133	\$138,217	2.01%	
	For Profit	\$108,950	\$41,200	\$12,000	\$72,000	\$214,800	\$90,903	\$408,703	5.93%	
	Other	\$844,146	\$1,168,621	\$1,103,565	\$99,722	\$44,615	\$92,827	\$446,714	6.48%	\$1,148,616
TOTAL	\$1,120,547	\$1,531,109	\$1,392,299	\$1,470,528	\$1,766,941	\$1,835,429	\$9,116,853	78.86%		
PHYSICAL SCI TOTAL:	Federal	\$245,621	\$72,824	\$113,959	\$191,399	\$233,449	\$271,029	\$1,128,281	0.65%	
	State	\$19,000	\$2,000	\$12,000	\$72,000	\$314,800	\$365,628	\$785,628	9.76%	
	University	\$108,950	\$41,200	\$67,400	\$99,722	\$44,615	\$92,827	\$454,714	6.79%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3.93%	
PHYSICAL SCI TOTAL:	\$1,494,118	\$1,647,133	\$1,585,658	\$1,833,649	\$2,359,805	\$2,639,913	\$11,560,276		\$1,926,713	

TABLE 11
TRENDS IN SOCIAL SCIENCE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:					1991* *Prelim	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990				
Anthropology	Federal	\$27,735	\$103,865	\$0	\$0	\$55,844	\$43,435	\$230,879	77.38%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$26,000	\$26,000	\$7,500	\$8,000	\$0	\$67,500	22.62%	\$49,730
TOTAL	\$27,735	\$129,865	\$26,000	\$7,500	\$63,844	\$43,435	\$298,379			
Anthropology Museum	Federal	\$0	\$31,726	\$0	\$35,714	\$25,000	\$2,336	\$94,776	28.40%	
	State	\$0	\$10,000	\$0	\$40,624	\$25,379	\$20,000	\$96,003	28.77%	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$2,298	\$31,959	\$24,333	\$0	\$0	\$5,356	\$63,946	19.16%	
TOTAL	\$13,200	\$73,685	\$24,333	\$28,000	\$34,048	\$3,726	\$78,974	23.67%	\$55,617	
Political Science	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$1,574	\$0	\$0	\$0	\$0	\$0	\$1,574	6.55%	
	University For Profit	\$0	\$22,455	\$0	\$0	\$0	\$0	\$22,455	93.45%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$1,574	\$22,455	\$0	\$0	\$0	\$0	\$24,029		\$4,005	
Sociology	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University For Profit	\$14,468	\$0	\$0	\$0	\$0	\$0	\$14,468	100.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$14,468	\$0	\$0	\$0	\$0	\$0	\$14,468		\$2,411	
SOCIAL SCIENCE TOTAL	Federal	\$27,735	\$135,591	\$0	\$35,714	\$80,844	\$45,771	\$325,655	48.56%	
	State	\$1,574	\$10,000	\$0	\$40,624	\$25,379	\$20,000	\$97,577	14.55%	
	University For Profit	\$2,298	\$54,414	\$24,333	\$0	\$0	\$5,356	\$86,401	12.88%	
	Other	\$13,200	\$26,000	\$26,000	\$35,500	\$42,048	\$3,726	\$146,474	21.84%	
SOCIAL SCIENCE TOTAL:	\$59,275	\$226,005	\$50,333	\$111,838	\$148,271	\$74,853	\$670,575		\$111,763	

TABLE 12
TRENDS IN MATHEMATICAL AND COMPUTER SCIENCE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Mathematics	Federal	\$53,600	\$0	\$0	\$0	\$0	\$0	\$53,600	100.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$53,600	\$0	\$0	\$0	\$0	\$0	\$53,600		\$8,933
Computer Science	Federal	\$98,000	\$0	\$0	\$19,900	\$11,508	\$0	\$129,408	23.96%	
	State	\$45,000	\$0	\$0	\$0	\$0	\$0	\$45,000	8.33%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$75,000	\$77,899	\$60	\$50,157	\$0	\$2,500	\$205,616	38.08%	
	Other	\$160,000	\$160,000	\$0	\$0	\$0	\$0	\$160,000	29.63%	
	TOTAL	\$218,000	\$237,899	\$60	\$70,057	\$11,508	\$2,500	\$540,024		\$90,004
MATH/COMP SCI TOTAL:	Federal	\$151,600	\$0	\$0	\$19,900	\$11,508	\$0	\$183,008	30.83%	
	State	\$45,000	\$0	\$0	\$0	\$0	\$0	\$45,000	7.58%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$75,000	\$77,899	\$60	\$50,157	\$0	\$2,500	\$205,616	34.64%	
	Other	\$160,000	\$160,000	\$0	\$0	\$0	\$0	\$160,000	26.95%	
	TOTAL	\$271,600	\$237,899	\$60	\$70,057	\$11,508	\$2,500	\$593,624		\$98,937

TABLE 13

TRENDS IN BUSINESS/ECONOMICS FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:						1991* *Prelim	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*				
Business	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	State	\$0	\$36,376	\$0	\$0	\$0	\$0	\$36,376	40.00%		
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$54,564	\$0	\$0	\$0	\$0	\$54,564	60.00%		
	TOTAL	\$0	\$90,940	\$0	\$0	\$0	\$0	\$90,940	0.00%	\$15,157	
Inst Econ & Bus Res	Federal	\$115,472	\$161,841	\$9,500	\$198,690	\$0	\$4,000	\$489,503	26.34%		
	State	\$278,623	\$73,870	\$38,999	\$232,370	\$17,854	\$175,198	\$816,914	43.96%		
	University For Profit	\$39,262	\$0	\$9,489	\$0	\$3,750	\$0	\$52,501	2.83%		
	Other	\$36,650	\$0	\$45,261	\$0	\$40,819	\$30,056	\$152,786	8.22%		
	TOTAL	\$482,007	\$252,211	\$326,593	\$479,160	\$84,001	\$234,254	\$1,858,226	18.65%	\$309,704	
BUSINESS/ECON. TOTAL:	Federal	\$115,472	\$161,841	\$9,500	\$198,690	\$0	\$4,000	\$489,503	25.11%		
	State	\$278,623	\$110,246	\$38,999	\$232,370	\$17,854	\$175,198	\$853,290	43.78%		
	University For Profit	\$39,262	\$0	\$9,489	\$0	\$3,750	\$0	\$52,501	2.69%		
	Other	\$36,650	\$54,564	\$45,261	\$0	\$40,819	\$30,056	\$207,350	10.64%		
BUSINESS/ECON. TOTAL:		\$482,007	\$343,151	\$326,593	\$479,160	\$84,001	\$234,254	\$1,949,166	17.78%	\$324,861	

TABLE 14

TRENDS IN RESEARCH SUPPORT OFFICE FUNDING AT KU: AWARDS FOR RESEARCH

Dept./Unit	Source	Fiscal Year:							TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*	1991*			
Research Support/ RSGA	Federal	\$119,127	\$101,707	\$92,194	\$72,087	\$82,208	\$28,520	\$495,843	99.30%		
	State	\$0	\$0	\$3,471	\$0	\$0	\$0	\$3,471	0.70%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	TOTAL	\$119,127	\$101,707	\$95,665	\$72,087	\$82,208	\$28,520	\$499,314		\$83,219	

TABLE 15
TRENDS IN SCIENCE AND ENGINEERING FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

GROUP	Source	Fiscal Year:						1991* *Prelim	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*				
Engineering	Federal	\$159,480	\$62,965	\$21,800	\$37,000	\$96,998	\$21,598	\$399,841	78.04%	\$66,640	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	Other	\$55,000	\$0	\$10,000	\$25,000	\$0	\$0	\$35,000	6.83%	\$5,833	
	TOTAL	\$214,480	\$62,965	\$31,800	\$62,000	\$119,482	\$21,598	\$512,325	15.12%	\$12,914	
Biological Sciences	Federal	\$0	\$0	\$0	\$184,740	\$2,434,854	\$84,656	\$2,704,250	71.33%	\$450,708	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	Other	\$47,000	\$2,000	\$12,000	\$1,009,800	\$0	\$0	\$1,086,855	28.67%	\$181,143	
	TOTAL	\$47,000	\$2,000	\$12,000	\$1,194,540	\$2,434,854	\$100,711	\$3,791,105		\$631,851	
Behavioral Sciences	Federal	\$928,771	\$1,912,501	\$2,337,134	\$858,582	\$254,779	\$1,010,919	\$7,302,686	82.05%	\$1,217,114	
	State	\$298,504	\$76,029	\$253,350	\$220,536	\$105,000	\$105,000	\$1,058,419	11.89%	\$176,403	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	Other	\$73,887	\$78,140	\$70,064	\$155,070	\$850	\$161,243	\$539,254	6.06%	\$89,876	
	TOTAL	\$1,301,162	\$2,066,670	\$2,660,548	\$1,234,188	\$360,629	\$1,277,162	\$8,900,359		\$1,483,393	
Geosciences	Federal	\$0	\$0	\$0	\$428,340	\$0	\$0	\$428,340	98.87%	\$71,390	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	University For Profit	\$0	\$4,900	\$0	\$0	\$0	\$0	\$4,900	1.13%	\$817	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	TOTAL	\$0	\$4,900	\$0	\$428,340	\$0	\$0	\$433,240		\$72,207	
Pharmacy	Federal	\$287,532	\$179,867	\$142,192	\$622,196	\$106,902	\$389,382	\$1,728,071	79.85%	\$288,012	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	University For Profit	\$105,734	\$21,681	\$0	\$25,000	\$0	\$25,000	\$177,415	8.20%	\$29,569	
	Other	\$31,670	\$69,554	\$15,000	\$45,034	\$68,460	\$29,000	\$258,718	11.95%	\$43,120	
	TOTAL	\$424,936	\$271,102	\$157,192	\$692,230	\$175,362	\$443,382	\$2,164,204		\$360,701	
Social Science	Federal	\$1,439,577	\$726,932	\$200,880	\$67,321	\$95,000	\$0	\$2,529,710	97.20%	\$421,618	
	State	\$0	\$0	\$0	\$2,137	\$0	\$2,000	\$4,137	0.16%	\$690	
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0	
	Other	\$21,016	\$7,500	\$0	\$0	\$15,000	\$25,300	\$68,816	2.64%	\$11,469	
	TOTAL	\$1,460,593	\$734,432	\$200,880	\$69,458	\$110,000	\$27,300	\$2,602,663		\$433,777	

GROUP	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Physical Science	Federal	\$0	\$0	\$0	\$0,600	\$18,792	\$113,608	\$183,000	65.47%	\$30,500
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$0	\$0	\$25,000	\$0	\$0	\$0	\$25,000	8.94%	\$4,167
	Other	\$11,500	\$13,600	\$11,600	\$11,600	\$23,200	\$0	\$71,500	25.58%	\$11,917
TOTAL	\$11,500	\$13,600	\$36,600	\$62,200	\$41,992	\$113,608	\$279,500		\$46,583	
Math & Computer Sci	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	State	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234	100.00%	\$4,206
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
TOTAL	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234		\$4,206	
Business/Economics	Federal	\$12,000	\$12,000	\$12,000	\$9,600	\$235,769	\$112,000	\$393,369	69.51%	\$65,562
	State	\$0	\$0	\$0	\$0	\$8,000	\$35,000	\$43,000	7.60%	\$7,167
	University	\$0	\$0	\$47,500	\$77,055	\$0	\$0	\$124,555	22.01%	\$20,759
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	Other	\$0	\$0	\$0	\$0	\$5,000	\$0	\$5,000	0.88%	\$833
TOTAL	\$12,000	\$12,000	\$59,500	\$86,655	\$248,769	\$147,000	\$565,924		\$94,321	
Research Support/ RSGA/Grad.School	Federal	\$0	\$0	\$0	\$0	\$82,809	\$400,000	\$482,809	75.57%	\$80,468
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$0
	Other	\$32,417	\$10,000	\$5,500	\$18,200	\$24,500	\$65,500	\$156,117	24.43%	\$26,020
TOTAL	\$32,417	\$10,000	\$5,500	\$18,200	\$107,309	\$465,500	\$638,926		\$106,488	
KU SUBTOTALS	Federal	\$2,827,360	\$2,894,265	\$2,714,006	\$2,258,379	\$3,325,903	\$2,132,163	\$16,152,076	81.11%	\$2,692,013
	State	\$298,504	\$76,029	\$253,350	\$222,673	\$138,234	\$142,000	\$1,130,790	5.68%	\$188,465
	University	\$0	\$0	\$47,500	\$77,055	\$0	\$0	\$124,555	0.63%	\$20,759
	For Profit	\$105,734	\$26,581	\$35,000	\$50,000	\$0	\$25,000	\$242,315	1.22%	\$40,386
	Other	\$272,490	\$180,794	\$114,164	\$1,239,704	\$159,494	\$297,098	\$2,263,744	11.37%	\$377,291
KU TOTAL	\$3,504,088	\$3,177,669	\$3,164,020	\$3,847,811	\$3,623,631	\$2,596,261	\$19,913,480		\$3,318,913	

Source: Research Support and Grants Administration, 1991

TABLE 16
TRENDS IN ENGINEERING FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:					TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990			
Aerospace Eng	Federal	\$18,904	\$0	\$0	\$0	\$0	\$40,502	64.30%	\$10,498
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$18,904	\$0	\$0	\$0	\$0	\$22,484	35.70%		
Architec. Eng.	Federal	\$0	\$0	\$0	\$0	\$0	\$0		\$0
	State	\$0	\$0	\$0	\$0	\$0	\$0		
	University	\$0	\$0	\$0	\$0	\$0	\$0		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0		
	Other	\$0	\$0	\$0	\$0	\$0	\$0		
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0			
CRIMC-Remote Sensing	Federal	\$0	\$0	\$0	\$0	\$0	\$0		\$0
	State	\$0	\$0	\$0	\$0	\$0	\$0		
	University	\$0	\$0	\$0	\$0	\$0	\$0		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0		
	Other	\$0	\$0	\$0	\$0	\$0	\$0		
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0			
Chem & Petrol Eng	Federal	\$0	\$0	\$21,800	\$0	\$0	\$21,800	100.00%	\$3,633
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$0	\$0	\$21,800	\$0	\$0	\$21,800			
Civil Engineering	Federal	\$8,000	\$0	\$0	\$0	\$0	\$8,000	100.00%	\$1,333
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$8,000	\$0	\$0	\$0	\$0	\$8,000			
Elec & Computer Eng	Federal	\$0	\$0	\$0	\$37,000	\$96,998	\$133,998	59.82%	\$37,333
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$10,000	\$25,000	\$0	\$35,000	15.63%	
	Other	\$55,000	\$0	\$0	\$0	\$0	\$55,000	24.55%	
TOTAL	\$55,000	\$0	\$10,000	\$62,000	\$96,998	\$223,998			
Energy Research Ctr	Federal	\$0	\$0	\$0	\$0	\$0	\$0		\$0
	State	\$0	\$0	\$0	\$0	\$0	\$0		
	University	\$0	\$0	\$0	\$0	\$0	\$0		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0		
	Other	\$0	\$0	\$0	\$0	\$0	\$0		
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0			

*=Prelim

TABLE 18
TRENDS IN BEHAVIORAL SCIENCE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:						1991*	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*				
Bureau of Child Res	Federal	\$928,771	\$1,723,990	\$2,053,379	\$562,647	\$0	\$1,010,919	\$6,279,706	80.02%		
	State	\$298,504	\$76,029	\$253,350	\$220,536	\$105,000	\$105,000	\$1,058,419	13.49%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$73,887	\$78,140	\$70,064	\$155,070	\$850	\$131,243	\$509,254	6.49%	\$1,307,897	
TOTAL	\$1,301,162	\$1,878,159	\$2,376,793	\$938,253	\$105,850	\$1,247,162	\$7,867,379				
Human Development	Federal	\$0	\$188,511	\$192,294	\$164,000	\$0	\$0	\$544,805	94.78%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$0	\$30,000	\$30,000	5.22%	\$95,801	
TOTAL	\$0	\$188,511	\$192,294	\$164,000	\$0	\$30,000	\$574,805				
Psychology	Federal	\$0	\$0	\$91,461	\$131,935	\$254,779	\$0	\$478,175	100.00%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
TOTAL	\$0	\$0	\$91,461	\$131,935	\$254,779	\$0	\$478,175		\$79,696		
BEHAVIORAL SCIENCE TOTAL	Federal	\$928,771	\$1,912,501	\$2,337,134	\$858,582	\$254,779	\$1,010,919	\$7,302,686	82.05%		
	State	\$298,504	\$76,029	\$253,350	\$220,536	\$105,000	\$105,000	\$1,058,419	11.89%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Other	\$73,887	\$78,140	\$70,064	\$155,070	\$850	\$161,243	\$539,254	6.06%			
TOTAL	\$1,301,162	\$2,066,670	\$2,660,548	\$1,234,188	\$360,629	\$1,277,162	\$8,900,359		\$1,483,393		

TABLE 19
TRENDS IN GEOSCIENCE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	1986	1987	1988	1989	1990	1991*	TOTAL	% of TOTAL	YR. MEAN
Geography	Federal	\$0	\$0	\$0	\$428,340	\$0	\$0	\$428,340	100.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$0	\$428,340	\$0	\$0	\$428,340		\$71,390
Geology	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$0
KS Geological Survey	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$4,900	\$0	\$0	\$0	\$0	\$4,900	100.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$4,900	\$0	\$0	\$0	\$0	\$4,900		\$817
GEOSCIENCES TOTAL	Federal	\$0	\$0	\$0	\$428,340	\$0	\$0	\$428,340	98.87%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$4,900	\$0	\$0	\$0	\$0	\$4,900	1.13%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL:	\$0	\$4,900	\$0	\$428,340	\$0	\$0	\$433,240		\$72,207

TABLE 20
TRENDS IN PHARMACY FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:					1991* *Prelim	TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990				
Medic Chemistry	Federal	\$0	\$0	\$0	\$246,684	\$0	\$408,156	76.12%		
	State	\$0	\$0	\$0	\$0	\$161,472	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$25,000	\$0	\$50,000	9.32%		
	Other	\$21,670	\$18,550	\$0	\$17,384	\$20,460	\$78,064	14.56%	\$89,370	
TOTAL	\$21,670	\$18,550	\$0	\$289,068	\$20,460	\$536,220				
Pharm & Toxicology	Federal	\$6,000	\$6,000	\$0	\$6,000	\$106,902	\$139,902	85.36%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$24,000	\$24,000	14.64%	\$27,317	
TOTAL	\$6,000	\$6,000	\$0	\$6,000	\$130,902	\$163,902				
Pharm Chemistry	Federal	\$182,132	\$173,867	\$142,192	\$369,512	\$0	\$1,025,013	78.30%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$105,734	\$21,681	\$0	\$0	\$0	\$127,415	9.73%		
	Other	\$10,000	\$51,004	\$15,000	\$27,650	\$24,000	\$29,000	11.97%	\$218,180	
TOTAL	\$297,866	\$246,552	\$157,192	\$397,162	\$24,000	\$1,309,082				
Ctr Bioanal Res	Federal	\$99,400	\$0	\$0	\$0	\$0	\$155,000	100.00%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	\$25,833	
TOTAL	\$99,400	\$0	\$0	\$0	\$0	\$155,000				
Higuchi Biosciences	Federal	\$0	\$0	\$0	\$0	\$0	\$0			
	State	\$0	\$0	\$0	\$0	\$0	\$0			
	University	\$0	\$0	\$0	\$0	\$0	\$0			
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0			
	Other	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0				
Biomed Research Ctr	Federal	\$0	\$0	\$0	\$0	\$0	\$0			
	State	\$0	\$0	\$0	\$0	\$0	\$0			
	University	\$0	\$0	\$0	\$0	\$0	\$0			
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0			
	Other	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
TOTAL	\$0	\$0	\$0	\$0	\$0	\$0				
PHARMACY TOTAL	Federal	\$287,532	\$179,867	\$142,192	\$622,196	\$106,902	\$389,382	\$1,728,071	79.85%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$105,734	\$21,681	\$0	\$25,000	\$0	\$25,000	\$177,415	8.20%	
	Other	\$31,670	\$69,554	\$15,000	\$45,034	\$68,460	\$29,000	\$258,718	11.95%	\$360,701
TOTAL	\$424,936	\$271,102	\$157,192	\$692,230	\$175,362	\$443,382	\$2,164,204			

TABLE 21
TRENDS IN PHYSICAL SCIENCE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Physics & Astronomy	Federal	\$0	\$0	\$0	\$15,600	\$18,792	\$113,608	\$148,000	68.05%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$11,500	\$11,600	\$11,600	\$11,600	\$23,200	\$0	\$69,500	31.95%	\$36,250
	TOTAL	\$11,500	\$11,600	\$11,600	\$27,200	\$41,992	\$113,608	\$217,500		
Chemistry	Federal	\$0	\$0	\$0	\$35,000	\$0	\$0	\$35,000	56.45%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$25,000	\$0	\$0	\$0	\$25,000	40.32%	
	Other	\$0	\$2,000	\$0	\$0	\$0	\$0	\$2,000	3.23%	\$10,333
	TOTAL	\$0	\$2,000	\$25,000	\$35,000	\$0	\$0	\$62,000		
PHYSICAL SCI TOTAL:	Federal	\$0	\$0	\$0	\$50,600	\$18,792	\$113,608	\$183,000	65.47%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$25,000	\$0	\$0	\$0	\$25,000	8.94%	
	Other	\$11,500	\$13,600	\$11,600	\$11,600	\$23,200	\$0	\$71,500	25.58%	
	TOTAL	\$11,500	\$13,600	\$36,600	\$62,200	\$41,992	\$113,608	\$279,500		\$46,583

TABLE 22
TRENDS IN SOCIAL SCIENCE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:							TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*	TOTAL			
Anthropology	Federal	\$0	\$0	\$0	\$67,321	\$0	\$0	\$0	\$67,321	69.17%	\$16,220
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$15,000	\$15,000	\$15,000	\$30,000	30.83%	
TOTAL	\$0	\$0	\$0	\$67,321	\$15,000	\$15,000	\$15,000	\$97,321			
Anthropology Museum	Federal	\$0	\$429,256	\$200,880	\$0	\$95,000	\$0	\$0	\$725,136	98.05%	\$123,262
	State	\$0	\$0	\$0	\$2,137	\$0	\$2,000	\$0	\$4,137	0.56%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$0	\$429,256	\$200,880	\$2,137	\$95,000	\$0	\$10,300	\$739,573	1.39%		
Political Science	Federal	\$156,808	\$297,676	\$0	\$0	\$0	\$0	\$0	\$454,484	94.10%	\$80,500
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$21,016	\$7,500	\$0	\$0	\$0	\$0	\$0	\$28,516	5.90%	
TOTAL	\$177,824	\$305,176	\$0	\$0	\$0	\$0	\$0	\$483,000			
Sociology	Federal	\$1,282,769	\$0	\$0	\$0	\$0	\$0	\$0	\$1,282,769	100.00%	\$213,795
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
TOTAL	\$1,282,769	\$0	\$0	\$0	\$0	\$0	\$0	\$1,282,769			
SOCIAL SCIENCE TOTAL	Federal	\$1,439,577	\$726,932	\$200,880	\$67,321	\$95,000	\$0	\$0	\$2,529,710	97.20%	\$433,777
	State	\$0	\$0	\$0	\$2,137	\$0	\$2,000	\$0	\$4,137	0.16%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Other	\$21,016	\$7,500	\$0	\$0	\$0	\$0	\$0	\$28,516	2.64%		
TOTAL	\$1,460,593	\$734,432	\$200,880	\$69,458	\$110,000	\$0	\$27,300	\$2,602,663			

TABLE 23

TRENDS IN MATHEMATICAL AND COMPUTER SCIENCE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Mathematics	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234	100.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234	\$4,206	
Computer Science	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
	TOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
MATH/COMP SCI TOTAL:	Federal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	State	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234	100.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	TOTAL	\$0	\$0	\$0	\$0	\$25,234	\$0	\$25,234	\$4,206	

TABLE 24

TRENDS IN BUSINESS/ECONOMICS FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:						1991* *Prelim	TOTAL	% of TOTAL	YR-MEAN
		1986	1987	1988	1989	1990	1991*				
Business	Federal	\$12,000	\$12,000	\$12,000	\$9,600	\$6,000	\$12,000	\$63,600	33.80%		
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	University For Profit	\$0	\$0	\$47,500	\$77,055	\$0	\$0	\$124,555	66.20%		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	TOTAL	\$12,000	\$12,000	\$59,500	\$86,655	\$6,000	\$12,000	\$188,155	0.00%	\$31,359	
Inst Econ & Bus Res Inst Pub Pol&Bus Res	Federal	\$0	\$0	\$0	\$0	\$229,769	\$100,000	\$329,769	87.29%		
	State	\$0	\$0	\$0	\$0	\$8,000	\$35,000	\$43,000	11.38%		
	University For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	Other	\$0	\$0	\$0	\$0	\$5,000	\$0	\$5,000	0.00%		
	TOTAL	\$0	\$0	\$0	\$0	\$242,769	\$135,000	\$377,769	1.32%	\$62,962	
BUSINESS/ECON. TOTAL:	Federal	\$12,000	\$12,000	\$12,000	\$9,600	\$235,769	\$112,000	\$393,369	69.51%		
	State	\$0	\$0	\$0	\$0	\$8,000	\$35,000	\$43,000	7.60%		
	University For Profit	\$0	\$0	\$47,500	\$77,055	\$0	\$0	\$124,555	22.01%		
	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
	TOTAL:	\$12,000	\$12,000	\$59,500	\$86,655	\$248,769	\$147,000	\$565,924	0.88%	\$94,321	

TABLE 25
TRENDS IN RESEARCH SUPPORT OFFICE FUNDING AT KU: AWARDS FOR EDUCATIONAL SERVICES

Dept./Unit	Source	Fiscal Year:						TOTAL	% of TOTAL	YR. MEAN
		1986	1987	1988	1989	1990	1991*			
Research Support/ RSCA/Grad School	Federal	\$0	\$0	\$0	\$0	\$82,809	\$400,000	\$482,809	75.57%	
	State	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	University	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	For Profit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
	Other	\$32,417	\$10,000	\$5,500	\$18,200	\$24,500	\$65,500	\$156,117	24.43%	
TOTAL		\$32,417	\$10,000	\$5,500	\$18,200	\$107,309	\$465,500	\$638,926		\$106,488

TABLE 26

TRENDS IN FUNDING FOR RESEARCH, EDUCATIONAL SERVICES, AND OTHER PROJECTS FROM NSF TO UNIVERSITY OF KANSAS: JULY '85 - JUNE '91

Department	Type of Award	\$ Awarded by Year:							1990	1991	** 1992	Total \$ Awarded	No. PI	Number Awarded	Number Submitted	% Awarded
		1986	1987	1988	1989	1990	1991	** 1992								
Engineering	Research Ed & Other	\$122,109	\$356,039	\$332,779	\$355,865	\$302,672	\$188,473	\$78,471	\$1,736,408	15	17	73	23%			
	Subtotal	\$122,109	\$356,039	\$332,779	\$355,865	\$302,672	\$188,473	\$78,471	\$1,736,408	15	17	73	23%			
Biological Sci	Research Ed & Other	\$1,155,155	\$627,100	\$307,540	\$1,964,928	\$459,707	\$636,619	\$4,875	\$5,155,924	31	47	128	37%			
	Subtotal	\$1,160,155	\$627,100	\$307,540	\$2,139,119	\$459,707	\$636,619	\$114,875	\$5,445,115	35	50	132	38%			
Behavioral Sci	Research Ed & Other	\$198,413	\$0	\$0	\$0	\$0	\$134,406	\$0	\$332,819	7	2	11	18%			
	Subtotal	\$198,413	\$0	\$0	\$0	\$0	\$134,406	\$0	\$332,819	7	2	11	18%			
Geological Sci	Research Ed & Other	\$0	\$533,461	\$155,400	\$424,186	\$215,594	\$171,934	\$273,701	\$1,774,276	14	23	65	35%			
	Subtotal	\$0	\$533,461	\$155,400	\$424,186	\$215,594	\$171,934	\$273,701	\$1,774,276	14	23	65	35%			
Pharmacy	Research Ed & Other	\$549,824	\$99,400	\$0	\$0	\$44,898	\$0	\$0	\$694,122	4	5	15	33%			
	Subtotal	\$549,824	\$99,400	\$0	\$162,642	\$44,898	\$0	\$55,600	\$218,242	1	2	2	100%			
Physical Sci	Research Ed & Other	\$184,500	\$300,000	\$312,490	\$608,025	\$700,782	\$87,430	\$207,426	\$2,400,653	15	20	61	33%			
	Subtotal	\$184,500	\$300,000	\$312,490	\$608,025	\$700,782	\$87,430	\$207,426	\$2,400,653	15	20	61	33%			
Math/Comp Sci	Research Ed & Other	\$155,700	\$0	\$398,895	\$405,840	\$41,991	\$227,108	\$0	\$1,229,534	11	16	56	29%			
	Subtotal	\$155,700	\$0	\$398,895	\$405,840	\$41,991	\$227,108	\$0	\$1,229,534	11	16	56	29%			
Social Sci	Research Ed & Other	\$0	\$10,170	\$31,726	\$0	\$12,850	\$6,120	\$0	\$60,866	3	4	12	33%			
	Subtotal	\$0	\$10,170	\$31,726	\$0	\$12,850	\$6,120	\$0	\$60,866	3	4	12	33%			
Business/Econ	Research Ed & Other	\$140,612	\$294,019	\$42,262	\$0	\$239,913	\$0	\$0	\$716,806	6	7	17	41%			
	Subtotal	\$140,612	\$294,019	\$42,262	\$0	\$239,913	\$0	\$0	\$716,806	6	7	17	41%			
RSGA	Research Ed & Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	0	0	0%			
	Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	0	0	0%			
		\$0	\$56,600	\$34,200	\$34,200	\$35,400	\$0	\$299,839	\$460,239	1	5	5	100%			
		\$0	\$56,600	\$34,200	\$34,200	\$35,400	\$0	\$299,839	\$460,239	1	5	5	100%			

TABLE 27
YEARLY AWARDS FOR RESEARCH FROM NSF TO UNIV. OF KS.

Department	\$ Awarded by Year:							Total \$ Awarded	No. PI	Number		% Awarded
	1986	1987	1988	1989	1990	1991*	1992*			Awarded	Submitted	
Aerosp. Eng.	\$0	\$0	\$0	\$0	\$0	\$0	\$42,061	\$42,061	1	1	3	33%
Archit. Eng.	\$59,609	\$0	\$0	\$0	\$0	\$0	\$0	\$59,609	1	1	4	25%
Chem&Ptrl. Eng.	\$0	\$0	\$148,846	\$0	\$64,625	\$0	\$0	\$213,471	3	3	14	21%
Civil Eng.	\$0	\$0	\$109,657	\$113,787	\$238,047	\$0	\$36,410	\$497,901	2	5	15	33%
Elec&Comp. Eng.	\$62,500	\$356,039	\$74,276	\$242,078	\$0	\$188,473	\$0	\$923,366	3	7	30	23%
Eng Mgmt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Mech Eng	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3	0	5	0%
Trans Res Ctr	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
ENGINEERING	\$122,109	\$356,039	\$332,779	\$355,865	\$302,672	\$188,473	\$78,471	\$1,736,408	15	17	73	23%
Biochemistry	\$0	\$373,000	\$28,334	\$303,045	\$0	\$0	\$0	\$704,379	3	4	13	31%
Botany	\$153,820	\$82,000	\$0	\$132,963	\$37,976	\$95,000	\$0	\$501,759	7	9	15	60%
Entomology	\$313,892	\$0	\$11,091	\$204,384	\$0	\$91,000	\$0	\$620,367	3	7	19	37%
Microbiology	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	2	0	3	0%
Musm. Mat. Hist.	\$547,767	\$172,100	\$9,664	\$854,113	\$113,989	\$263,882	\$4,875	\$1,966,390	9	17	47	36%
Phys&Cell Bio.	\$0	\$0	\$258,451	\$0	\$138,800	\$90,000	\$0	\$487,251	3	4	11	36%
Syst. & Ecol.	\$139,676	\$0	\$0	\$470,423	\$168,942	\$96,737	\$0	\$875,778	4	6	20	30%
BIOLOGICAL SCI	\$1,155,155	\$627,100	\$307,540	\$1,964,928	\$459,707	\$636,619	\$4,875	\$5,155,924	31	47	128	37%
Bur Child Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3	0	3	0%
Human Develop	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3	0	4	0%
Psychology	\$198,413	\$0	\$0	\$0	\$0	\$134,406	\$0	\$332,819	1	2	4	50%
BEHAVIORAL SCI	\$198,413	\$0	\$0	\$0	\$0	\$134,406	\$0	\$332,819	7	2	11	18%
Geography	\$0	\$38,441	\$50,000	\$0	\$12,000	\$0	\$0	\$100,441	2	3	6	50%
Geology	\$0	\$495,020	\$105,400	\$424,186	\$203,594	\$171,934	\$173,706	\$1,573,840	11	19	56	36%
Ks. Geol. Sur.	\$0	\$0	\$0	\$0	\$0	\$0	\$99,995	\$99,995	1	1	3	33%
GEOLOGICAL SCI	\$0	\$533,461	\$155,400	\$424,186	\$215,594	\$171,934	\$273,701	\$1,774,276	14	23	65	35%
Pharm Chem	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Med Chem	\$0	\$0	\$0	\$0	\$30,302	\$0	\$0	\$30,302	1	2	4	50%
Higuchi Biosci	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Ctr. Bioan. Res.	\$549,824	\$99,400	\$0	\$0	\$14,596	\$0	\$0	\$663,820	1	3	4	75%
Biomedical Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0	0	5	0%
PHARMACY	\$549,824	\$99,400	\$0	\$0	\$44,898	\$0	\$0	\$694,122	4	5	15	33%
Phys & Astron	\$184,500	\$0	\$300,000	\$143,975	\$651,960	\$37,030	\$0	\$1,317,465	7	10	30	33%
Chemistry	\$0	\$300,000	\$12,490	\$464,050	\$48,822	\$50,400	\$207,426	\$1,083,188	8	10	31	32%
PHYSICAL SCI	\$184,500	\$300,000	\$312,490	\$608,025	\$700,782	\$87,430	\$207,426	\$2,400,653	15	20	61	33%

Department	\$ Awarded by Year:							Total \$ Awarded	No. PI	Number		% Awarded
	1986	1987	1988	1989	1990	1991*	1992*			Awarded	Submitted	
Mathematics	\$155,700	\$0	\$398,895	\$385,940	\$41,991	\$215,600	\$0	\$1,198,126	9	14	38	37%
Computer Sci.	\$0	\$0	\$0	\$19,900	\$0	\$11,508	\$0	\$31,408	2	2	18	11%
MATH/COMP SCI	\$155,700	\$0	\$398,895	\$405,840	\$41,991	\$227,108	\$0	\$1,229,534	11	16	56	29%
Anthropology	\$0	\$0	\$0	\$0	\$0	\$6,120	\$0	\$6,120	1	1	8	13%
Anthro. Museum	\$0	\$10,170	\$31,726	\$0	\$12,850	\$0	\$0	\$54,746	2	3	4	75%
SOCIAL SCI	\$0	\$10,170	\$31,726	\$0	\$12,850	\$6,120	\$0	\$60,866	3	4	12	33%
Business	\$5,155	\$0	\$0	\$0	\$0	\$0	\$0	\$5,155	1	1	3	33%
IPBR	\$135,457	\$294,019	\$42,262	\$0	\$239,913	\$0	\$0	\$711,651	5	6	14	43%
BUSINESS/ECON	\$140,612	\$294,019	\$42,262	\$0	\$239,913	\$0	\$0	\$716,806	6	7	17	41%
Linguistics	\$0	\$0	\$0	\$0	\$10,188	\$0	\$0	\$10,188	1	1	2	50%
Government	\$0	\$0	\$29,291	\$0	\$0	\$0	\$0	\$29,291	1	1	1	100%
Spe&Dr/LangHrg	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	2	0	5	0%
OTHER	\$0	\$0	\$29,291	\$0	\$10,188	\$0	\$0	\$39,479	4	2	8	25%
SCI & ENG TOTAL	\$2,506,313	\$2,220,189	\$1,610,383	\$3,758,844	\$2,028,595	\$1,452,090	\$564,473	\$14,140,887	110	143	446	32%

*Preliminary data

Source: Derived from data provided by Research Support and Grants Administration, 1991

TABLE 28
AWARDS FOR EDUCATIONAL SERVICES FROM NSF

Department	\$ Awarded by Year:					1990	** 1991	** 1992	Total \$ Awarded	No. PI	Number		% Awarded
	1986	1987	1988	1989	1990						Awarded	Submitted	
Biological Sci	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Math/Comp Sci	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Pharmacy	\$0	\$0	\$0	\$162,642	\$0	\$0	\$55,600	\$218,242	\$0	1	2	2	100%
Physical Sci	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	3	0	3	0%
RSGA	\$0	\$56,600	\$34,200	\$34,200	\$35,400	\$0	\$0	\$160,400	\$0	1	4	4	100%
Other(Not S&E)	\$0	\$0	\$403,865	\$0	\$35,400	\$0	\$352,215	\$756,080	\$0	1	2	2	100%
TOTAL	\$0	\$56,600	\$34,200	\$600,707	\$35,400	\$0	\$407,815	\$1,134,722	\$0	8	8	13	62%

**Preliminary data (incomplete)

AWARDS FOR OTHER PROJECTS FROM NSF

Department	\$ Awarded by Year:					1990	** 1991	** 1992	Total \$ Awarded	No. PI	Number		% Awarded
	1986	1987	1988	1989	1990						Awarded	Submitted	
Biological Sci	\$5,000	\$0	\$0	\$174,191	\$0	\$0	\$110,000	\$289,191	\$0	4	3	4	75%
Engineering	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1	0	1	0%
Physical Sci	\$0	\$0	\$0	\$0	\$0	\$24,154	\$0	\$24,154	\$0	2	1	2	50%
RSGA	\$0	\$0	\$0	\$0	\$0	\$0	\$299,839	\$299,839	\$0	1	1	1	100%
Other(Not S&E)	\$0	\$0	\$0	\$0	\$0	\$191,052	\$0	\$191,052	\$0	1	1	1	100%
TOTAL	\$5,000	\$0	\$0	\$174,191	\$0	\$215,206	\$409,839	\$804,236	\$0	9	6	9	67%

**Preliminary data (incomplete)

Source: Derived from data provided by Research Support and Grants Administration, 1991

TABLE 29

RANK BY TOTAL NSF RESEARCH DOLLARS AWARDED: JULY '86-JUNE '91

PI	No. of Grants	Total \$ Awarded	Distribution by \$ Awarded:					>\$1mill.
			\$1-50K	\$51-100K	\$101-500K	\$501K-1mill.		
1 Annar, R.	3	\$1,062,400	0	0	2	1	0	
2 Kuwana, T.	3	\$663,820	1	1	0	1	0	
3 Duellman, W.	5	\$563,103	2	0	3	0	0	
4 Moore, R.	3	\$484,893	0	1	2	0	0	
5 Shafer, G.	2	\$442,832	0	0	2	0	0	
6 Bunce, J.	2	\$440,502	0	1	1	0	0	
7 Schultze, H.	4	\$437,618	1	0	3	0	0	
8 Darwin, D.	4	\$428,768	1	0	3	0	0	
9 Van Schmus, W.	3	\$402,756	0	0	3	0	0	
10 Gegenheimer, P.	1	\$373,000	0	0	1	0	0	
11 Michener, C.	4	\$357,628	1	2	1	0	0	
12 Suprenant, K.	2	\$348,451	0	1	1	0	0	
13 Rowell, A.	3	\$334,346	0	1	2	0	0	
14 Batson, C.	2	\$332,819	0	0	2	0	0	
15 Adams, R.	1	\$300,000	0	0	1	0	0	
16 O'Brien, W.	2	\$299,674	0	0	2	0	0	
17 Busch, D.	1	\$293,050	0	0	1	0	0	
18 Duncan, T.	2	\$290,123	0	1	1	0	0	
19 Trueb, L.	2	\$281,079	0	0	2	0	0	
20 Holt, R.	1	\$270,750	0	0	1	0	0	
21 Richter, M.	1	\$263,231	0	0	1	0	0	
22 Frost, V.	2	\$250,000	0	1	1	0	0	
23 Timm, R.	1	\$239,931	0	0	1	0	0	
24 Alexander, H.	2	\$208,617	1	0	1	0	0	
TOTAL	56	\$9,369,391	7	9	38	2	0	
PERCENT OF KU TOTAL	0.37	66%						

TABLE 30

AWARDS FOR RESEARCH FROM NSF TO UNIV. OF KS.: JULY '85 - JUNE '91

Department	PI & Total by Unit:	No. of Unit:Grants	Total \$ Awarded	Distribution by \$ Awarded:			
				\$1-50K	\$51-100K	\$101-500K	>\$1mill.
Aerosp.Eng.	Roskam, J.	1	\$42,061	1	0	0	0
Anthropology	Janzen, J.	1	\$6,120	1	0	0	0
Anthro.Museum	Johnson, A.	1	\$31,726	1	0	0	0
	Montet-White, A.	2	\$23,020	2	0	0	0
TOTAL		2	\$54,746	3	0	0	0
Archit.Eng.	Rowings, J.	1	\$59,609	0	1	0	0
Biochemistry	Gegenheimer, P.	1	\$373,000	0	0	1	0
	Newmark, M.	2	\$68,148	2	0	0	0
	Richter, M.	1	\$263,231	0	0	1	0
TOTAL		3	\$704,379	2	0	2	0
Botany	Hamrick, J.	1	\$6,000	1	0	0	0
	Haufler, C.	2	\$138,503	1	0	1	0
	Hufford, L.	1	\$1,400	1	0	0	0
	Lane, M.	1	\$37,976	1	0	0	0
	Lichtwardt, R.	2	\$177,000	0	2	0	0
	Martin, C.	1	\$55,000	0	1	0	0
	Werth, C.	1	\$85,880	0	1	0	0
TOTAL		7	\$501,759	4	4	1	0
Business	Joy, O.	1	\$5,155	1	0	0	0
Chem&Ptrl.Eng.	Mesler, R.	1	\$78,640	0	1	0	0

	Subramaniam, B.	1	\$70,206	0	1	0	0	0	0
	Thompson, B.	1	\$64,625	0	1	0	0	0	0
TOTAL		3	\$213,471	0	3	0	0	0	0
Chemistry	Adams, R.	1	\$300,000	0	0	1	0	0	0
	Busch, D.	1	\$293,050	0	0	1	0	0	0
	Harmony, M.	2	\$175,600	1	0	1	0	0	0
	Johnson, C.	1	\$187,646	0	0	1	0	0	0
	Landgrebe, J.	2	\$45,800	2	0	0	0	0	0
	Lunte, C.	1	\$19,780	1	0	0	0	0	0
	Mertes, K.	1	\$48,822	1	0	0	0	0	0
	Wilson, G.	1	\$12,490	1	0	0	0	0	0
TOTAL		8	\$1,083,188	6	0	4	0	0	0
Ctr. Bioan. Res.	Kuwana, T.	1	\$663,820	1	1	0	1	0	0
Civil Eng.	Darwin, D.	4	\$428,768	1	0	3	0	0	0
	Roddis, W.K.	1	\$69,133	0	1	0	0	0	0
TOTAL		2	\$497,901	1	1	3	0	0	0
Computer Sci.	Ford, R.	1	\$19,900	1	0	0	0	0	0
	Kinnersley, N.	1	\$11,508	1	0	0	0	0	0
TOTAL		2	\$31,408	2	0	0	0	0	0
Elec&Comp. Eng.	Frost, V.	2	\$250,000	0	1	1	0	0	0
	Gogineni, S.	2	\$188,473	0	1	1	0	0	0
	Moore, R.	3	\$484,893	0	1	2	0	0	0
TOTAL		3	\$923,366	0	3	4	0	0	0
Entomology	Bell, W.	1	\$166,773	0	0	1	0	0	0

Michener, C.	4	\$357,628	1	2	1	0	0
Taylor, O.	2	\$95,966	1	1	0	0	0
TOTAL	3	\$620,367	2	3	2	0	0
Geology							
Bickford, M.	2	\$172,800	0	1	1	0	0
Black, R.	1	\$126,066	0	0	1	0	0
Dort, W.	1	\$33,860	1	0	0	0	0
Enos, P.	1	\$91,100	0	1	0	0	0
Farr, M.	1	\$47,640	1	0	0	0	0
Robison, R.	2	\$140,055	0	2	0	0	0
Rowell, A.	3	\$334,346	0	1	2	0	0
Van Schmus, W.	3	\$402,756	0	0	3	0	0
Walker, J.	3	\$128,212	2	1	0	0	0
Walton, A.	1	\$95,005	0	1	0	0	0
Zeller, E.	1	\$2,000	1	0	0	0	0
TOTAL	11	\$1,573,840	5	7	7	0	0
Geography							
Johnson, W.	2	\$50,441	2	0	0	0	0
Slocum, T.	1	\$50,000	1	0	0	0	0
TOTAL	2	\$100,441	3	0	0	0	0
Government							
Rowland, C.	1	\$29,291	1	0	0	0	0
Ks.Geol.Sur.							
Feldman, H.	1	\$99,995	0	1	0	0	0
Hall Ctr.							
Humanities							
Creese, M.	1	\$30,302	1	0	0	0	0
IPPBR							
Bennett, E.	1	\$42,262	1	0	0	0	0
Hillmer, S.	1	\$34,842	1	0	0	0	0
Schrodt, P.	1	\$56,258	0	1	0	0	0
Shafer, G.	2	\$442,832	0	0	2	0	0

	Yu, P-L.	1	\$135,457	0	0	1	0	0	0
	TOTAL	5	\$711,651	2	1	3	0	0	0
Linguistics	Pye, C.	1	\$10,188	1	0	0	0	0	0
Mathematics	Bayer, M.	1	\$29,700	1	0	0	0	0	0
	Bunce, J.	2	\$440,502	0	1	1	0	0	0
	Byers, R.	2	\$47,041	2	0	0	0	0	0
	Dorfmeister, J.	1	\$20,600	1	0	0	0	0	0
	Duncan, T.	2	\$290,123	0	1	1	0	0	0
	Fleissner, W.	2	\$41,900	2	0	0	0	0	0
	Galvin, F.	2	\$117,710	1	1	0	0	0	0
	Salinas, N.	1	\$154,275	0	0	1	0	0	0
	Sheu, A.	1	\$56,275	0	1	0	0	0	0
	TOTAL	9	\$1,198,126	7	4	3	0	0	0
Musm.Nat.Hist.	Duellman, W.	5	\$563,103	2	0	3	0	0	0
	Frost, J.	1	\$66,796	0	1	0	0	0	0
	Jenkinson, M.	1	\$15,000	1	0	0	0	0	0
	Livezey, B.	1	\$172,100	0	0	1	0	0	0
	Martin, L.	1	\$9,664	1	0	0	0	0	0
	Schultze, H.	4	\$437,618	1	0	3	0	0	0
	Timm, R.	1	\$239,931	0	0	1	0	0	0
	Trueb, L.	2	\$281,079	0	0	2	0	0	0
	Wiley, E.	1	\$181,099	0	0	1	0	0	0
	TOTAL	9	\$1,966,390	5	1	11	0	0	0
Phys&Cell Bio.	Dahl, N.	1	\$20,000	1	0	0	0	0	0
	Suprenant, K.	2	\$348,451	0	1	1	0	0	0
	Wu, J-Y.	1	\$118,800	0	0	1	0	0	0
	TOTAL	3	\$487,251	1	1	2	0	0	0

Phys & Astron	Ammar, R.	3	\$1,062,400	0	0	2	1	0
	Anthony-Twarog, B.	1	\$31,700	1	0	0	0	0
	Cravens, T.	1	\$136,500	0	0	1	0	0
	Dreschhoff, G.	1	\$40,560	1	0	0	0	0
	Melott, A.	2	\$33,675	2	0	0	0	0
	Ralston, J.	1	\$10,830	1	0	0	0	0
	Twarog, B.	1	\$1,800	1	0	0	0	0
TOTAL		7	\$1,317,465	6	0	3	1	0
Psychology	Batson, C.	1	\$332,819	0	0	2	0	0
Syst & Ecol	Alexander, H.	2	\$208,617	1	0	1	0	0
	Halpin, Z.T.	1	\$96,737	0	1	0	0	0
	Holt, R.	1	\$270,750	0	0	1	0	0
	O'Brien, W.	2	\$299,674	0	0	2	0	0
TOTAL		4	\$875,778	1	1	4	0	0

TOTAL	93	142	\$14,140,887	57	32	51	2	0
AVERAGE PER PI		1.56	\$152,053					
AVERAGE PER GRANT			\$99,584					

KSTAR QUESTIONNAIRE #1

QUESTIONS FOR KIM MORELAND ON NSF FUNDING AT KU

Since FY 1985, KU has received 145 NSF grants (excluding dissertation fellowships) for a total of roughly \$15 million. Should we be encouraged by these figures or not? How do you think KU fares in competing for NSF grants overall?

NSF awards have ranged in size from \$1,400 to over \$500,000, with an average award of \$104,056. Does the type of grant and/or the size seem to make any difference?

The EPSCoR planning grant suggests that KU is pretty successful in competing for modest NSF awards, but not for the big ones? Is this true? Why? Why not?

What are the factors that make a proposal competitive for NSF? Are there any specific factors unique to NSF?

What is difference b/w the "hits" and the "near misses"?

What are the institutional strengths in competing for NSF dollars?

What are the weaknesses?

What about the state overall? Are their particular laws or administrative procedures that are especially troublesome to KU and/or individual investigators?

Which departments are most successful and why?

Which departments should be doing more? What could they and should they do?

Does NSF present any unique problems to those seeking support?

Does it facilitate the grant-seeking process in any way?

The K*STAR planning grant seeks to encourage both intracampus and intercampus "small group consortia" (2-3 faculty) and "thrust area projects" (4 or more faculty). How prevalent are such arrangements now? How likely is this project to enhance such research? What are the barriers on campus? Across regents institutions? Beyond the state? Are there such groups out there that with just a little nudge might form? How might they be encouraged?

We want to interview several types of grant recipients and aspirants to get an idea of the problems facing those seeking NSF funds at the departmental, institutional, state, and regional levels. Bearing in mind that time and resources greatly restrict the number of people we can interview, who should we talk to in the following categories:

Kim Moreland Questionnaire 2

- a) Chairs of departments/units that are successful in going after NSF, those that are eligible but are not grant active; and those that concentrate on other funding sources and don't actively pursue NSF;
- b) Faculty who are repeatedly successful in receiving NSFs
- c) Faculty who are repeatedly successful in receiving external funds in categories which NSF funds, but who shy away from NSF
- d) NSF aspirants (the "also rans")
- e) Potential aspirants (research-active faculty who do not actively pursue external support)--check GRF files on this
- f) Grant-active faculty who have recently come to KU
- g) NSF program officers who would speak candidly on the problems facing Kansas institutions, KU, and specific departments and faculty.

I've saved the stickiest issue till last. As I'm sure you know, many faculty complain of this office's shortcomings in encouraging and facilitating the overall research mission of the university in general and their individual research agendas in particular. Is the problem a serious one, or is it just the grumbling of academics? What does your office do to facilitate the grantwriting business? What are the barriers to PIs? to your office? What might be done to improve the overall situation?

KSTAR QUESTIONNAIRE #2, CHAIRS OF NSF-ELIGIBLE DEPARTMENTS

Department _____

Since FY 1985, your department has applied for _____ NSF grants totaling \$ _____; your department has been awarded _____ grants for a total of \$ _____; _____ proposals are pending for a total of \$ _____. Are any members of your department in the process of preparing/submitting proposals to NSF _____ yes _____ no. If so,

who _____; type _____

who _____; type _____

who _____; type _____

Do you think your "hit" ratio of _____ % is a good one, or not? _____ yes _____ no Why, or why not?

Does the type of grant and/or the size seem to make any difference in success in seeking NSF funds? _____ yes _____ no. Elaborate.

Of the rejects, how many were "near misses"? _____

What was the difference between these and the "hits"?

Does NSF present any particular problems to members of your faculty in seeking support? _____ yes _____ no Explain.

What are your department's strengths in competing for NSF funding?

_____;

_____;

_____;

What are its weaknesses?

_____;

_____;

_____;

Here are some areas that others have identified as either strengths or weaknesses for their departments, would you please comment on them for your own unit? [Ask only for those areas not specifically discussed above.]

Departmental reputation

KSTAR, Chair Questionnaire 2

Teaching load and thrust (i.e., graduate/undergraduate)

Facilities

Support Services

Equipment

Quality and number of graduate students

Location

Proximity to industry

Other

What is the departmental philosophy on external grants? In other words, are faculty encouraged to seek outside funding? discouraged? neutral? What rewards, if any, accrue to faculty who submit proposals?

What are the departmental disincentives, if any?

What percentage of their time is your faculty expected to devote to teaching _____% research _____% service _____%. [Use merit-salary weights as an operational measure.]

What degree of freedom are individual faculty members given to decide for themselves the emphasis they will place on each area.

___ complete ___ a lot ___ some ___ a little ___ none

What factors enter into your faculty members' decisions to:

pursue or bypass an RFP _____

choose or reject NSF _____

Should your department be doing more to obtain external support?
___ yes ___ no ___ maybe

What might be done to increase the number of submissions and improve your chances at external awards overall?

NSF in particular?

The K*STAR planning grant seeks to encourage both intracampus and intercampus "small group consortia" (2-3 faculty) and "thrust area projects" (4 or more faculty). How prevalent are such arrangements among your faculty now?

What are the barriers on campus?

Across regents institutions?

Beyond the state?

Are there such groups out there that with just a little nudge might form?

How might they be encouraged?

Many faculty complain about the shortcomings of Research Support and Grants Administration in encouraging and facilitating the overall research mission of the university in general and their individual research agendas in particular. Is the problem a serious one, or is it just the grumbling of academics?

___ serious ___ just grumbling ___ don't know

What are the barriers to PIs? _____

What is RSGA doing right? _____

How does RSGA compare with such units at other universities with which you are familiar? ___ worse ___ better ___ about the same.

Explain _____

What improvements should be made? _____

Other than RSGA, does KU present any particular barriers to PIs? _____

How does KU compare with other universities with which you are familiar? ___ worse ___ better ___ about the same.

Explain _____

How do State of Kansas regulations compare with those of states with which you are familiar? ___ worse ___ better ___ about the same ___ don't know. Explain _____

KSTAR, Chair Questionnaire 4

Some people say that just being in Kansas automatically disadvantages applicants for NSF or other major funding? Do you _____ agree _____ disagree _____ don't know.

What, if any, are the barriers? _____

What, if any, are the strengths? _____

How does Kansas compare with other states with which you are familiar? _____worse _____better _____about the same _____don't know
Explain _____

What improvements should be made? _____

We want to interview several types of grant recipients and aspirants to get an idea of the problems facing those seeking NSF funds at the departmental, institutional, state, and regional levels. Bearing in mind that time and resources greatly restrict the number of people we can interview, who among your faculty and/or colleagues around the university who should we talk to in the following categories:

a) Faculty who are repeatedly successful in receiving NSFs

_____;

b) Faculty who are repeatedly successful in receiving external funds in categories which NSF funds, but who shy away from NSF

_____;

c) NSF aspirants (the "also rans")

_____;

d) Potential aspirants (research-active faculty who do not actively pursue external support)

_____;

e) Grant-active faculty who have recently come to KU

_____;

KSTAR, Chair Questionnaire 5

Is there anything I've left out and you think is germane to this issue?

Is there anything you'd like to ask me?

Thank you very much for your time.

KSTAR QUESTIONNAIRE #3, FACULTY

Name _____ Department _____

Since FY 1985, you have applied for _____ NSF grants totaling \$ _____, and have been awarded _____ grants for a total of \$ _____. You have _____ proposals now pending for a total of \$ _____. Are you in the process of preparing/submitting a proposal to NSF _____ yes _____ no. If so, what type _____, and for about how much? \$ _____.

Since FY 1985, have you applied to sources other than NSF? _____ yes _____ no

Source _____ Type _____ Amt \$ _____

Source _____ Type _____ Amt \$ _____

Source _____ Type _____ Amt \$ _____

Are you in the process of preparing/submitting a proposal to any other funding agency? _____ yes _____ no If so, who _____ type _____; and for about how much? \$ _____

Since 1985, your NSF "hit" ratio has been ____%. How does this compare with your hit ratio with other funders? _____ better _____ worse _____ about the same

Of those proposals NSF declined to fund, how many were "near misses"? _____ How close did you get? score _____

What was the difference between these and the "hits"?

Probe for specific critiques, gingerly explore the possibility of seeing the pink sheets.

_____;

_____;

Does the type of grant and/or the size seem to make any difference in successfully seeking NSF funds?? _____ yes _____ no Elaborate.

Does NSF present any particular problems for you in seeking support? _____ yes _____ no Explain.

In applying for external funds, what unit do you usually go through? _____. If different than academic department, why do you use it rather than your department?

What are your department's strengths in competing for NSF funding?

_____ ; _____
_____ ; _____
_____ ; _____

What are its weaknesses?

_____ ; _____
_____ ; _____
_____ ; _____

Here are some areas that others have identified as either strengths or weaknesses for their departments, would you please comment on them for your own unit? [Ask only for those areas not specifically discussed above.]

Departmental reputation

Teaching load and thrust (i.e., graduate/undergraduate)

Facilities

Support Services

Equipment

Quality and number of graduate students

Location

Proximity to industry

Other

What is the departmental philosophy on external grants? In other words, are faculty encouraged to seek outside funding? discouraged? neutral? What rewards, if any, accrue to faculty who submit proposals?

_____ ; _____
_____ ; _____

What are the departmental disincentives, if any?

_____ ; _____

_____ ; _____

What percentage of their time is your faculty expected to devote to teaching _____% research _____% service _____%. [Use merit-salary weights as an operational measure.]

What degree of freedom are individual faculty members given to decide for themselves the emphasis they will place on each area.

____complete ____a lot ____some ____a little ____none

What percentage of your time do you devote to teaching _____% research _____% and service _____%.

What factors enter into your decision to:

pursue or bypass an RFP _____

choose or reject NSF _____

Have you considered submitting to NSF in the last 6 years, but ultimately decided not to? ____yes ____no. If yes, what factors entered into your decision? _____;

_____ ; _____.

Should your department be doing more to obtain external support? ____yes ____no ____maybe

What might be done to increase the number of submissions and improve your chances at external awards overall?

NSF in particular? :

Should you be doing more to obtain external support? ____yes ____no ____maybe

What might be done to increase the number of submissions and improve your chances at external awards overall? :

NSF in particular?

KSTAR, NSF-funded Faculty Questionnaire 4

The K*STAR planning grant seeks to encourage both intracampus and intercampus "small group consortia" (2-3 faculty) and "thrust area projects" (4 or more faculty). Are you involved in such an arrangement ___yes ___no. If yes, ___on-campus ___off-campus or ___both. Explain.

How prevalent are such arrangements in your faculty now? What are the barriers on campus? Across regents institutions? Beyond the state? Are there such groups out there that with just a little nudge might form? How might they be encouraged?

Many faculty complain the shortcomings of Research Support and Grants Administration in encouraging and facilitating the overall research mission of the university in general and their individual research agendas in particular. Is the problem a serious one, or is it just the grumbling of academics?
___serious ___just grumbling ___don't know

What are the barriers to PIs? _____

What is RSGA doing right? _____

How does RSGA compare with such units at other universities with which you are familiar?
___worse ___better ___about the same. Explain _____

What improvements should be made in RSGA?

Other than RSGA, does KU present any particular barriers to PIs?

How does KU compare with other universities with which you are familiar? ___worse ___better ___about the same.

Explain _____

How do State of Kansas regulations compare with those of states with which you are familiar? ___worse ___better ___about the same ___don't know. Explain _____

K&STAR, NSF-funded Faculty Questionnaire 5

Some people say that just being in Kansas automatically disadvantages applicants for NSF or other major funding? Do you
___agree ___disagree ___don't know.

What, if any, are the barriers? _____

What, if any, are the strengths? _____

How does Kansas compare with other states with which you are familiar? ___worse ___better ___about the same.
Explain _____

What improvements should be made? _____

Is there anything I've left out and you think is germane to this issue?

Is there anything you'd like to ask me?

Thank you very much for your time.