

ANNUAL REPORT

EXTERNALLY FUNDED RESEARCH

BRIGHAM YOUNG UNIVERSITY

1 SEPTEMBER 1984 - 31 AUGUST 1985

Prepared by the Office of Research Administration
C-37 Abraham Smoot Building



Brigham Young University

Office of Research Administration

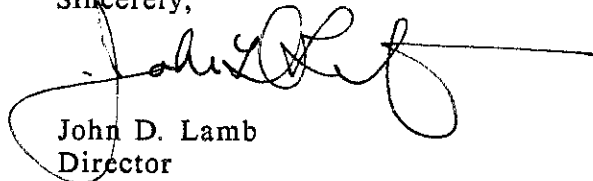
F. LaMond Tullis
Associate Academic Vice President
D-367 ASB
Brigham Young University
Provo, UT 84602

Dear Dr. Tullis:

The Office of Research Administration's Annual Report on Externally Funded Research is herein submitted for the year 1984-85. The report briefly describes some of the recent organizational changes in our office and provides detailed information on externally funded research programs and proposals at BYU.

We continue our commitment to assist BYU faculty in developing strong research programs in all areas.

Sincerely,



John D. Lamb
Director

JDL:ka

TABLE OF CONTENTS.

Summary	1
Office of Research Administration Organization	2-5
External Funds Received	6-20
External Funds Received/Grants & Contracts	7
External Funds Received According to College	8
College of Biology and Agriculture	9
College of Education	10
College of Engineering and Technology	11
College of Family, Home & Social Sciences	12
College of Fine Arts & Communications	13
College of Humanities	14
Law School	15
College of Nursing	16
College of Physical Education	17
College of Physical & Mathematical Sciences	18
Religious Instruction	19
School of Management	20

Research Grant/Contract Awards By College & Department	21-31
Source Breakdown - Grants & Contracts	32-34
Grant/Contract Awards By Amount	35-36
Sponsored Research Activity by College & Department	37
Sponsored Research Proposals	38
Summary of Sponsored Research Programs	39-42
Proposals Submitted for External Funds	43
Expenditures of External Funds	44
Research Expenditures by Category	45
Expenditures of External Funds by Department & College	46-48

SUMMARY

This report summarizes the research activity of faculty members, departments, colleges, research centers, and institutes participating in Sponsored Research.

It also reports on services provided by the Office of Research Administration. The mission of this office has traditionally been one of individualized service to relieve researchers at BYU of many administrative burdens associated with the procurement and maintenance of research funding, including all areas of pre- and post- award functions. It is hoped that the quality of these services has been instrumental in the encouragement of research activity at BYU.

New focus has been added to our office with recent changes in personnel. Programs and policies are being implemented to coordinate the university's patenting and licensing of technologies and software. A major goal of the office is to make these activities self-supporting, and to increase the benefits that can accrue to the university by improvements in policy.

During the 1984-85 academic year, 139 separate research awards were made to faculty members and \$8,623,228 were brought into the University to fund research. There were 29 fewer awards made this year than the previous year. Sponsored research funding came from federal, state, and private sources.

In the breakdown of external funds received by college, state support received is included in the private sources (non-federal sources).

There were 176 proposals submitted during the 1984-85 academic year. Of the proposals submitted, 60 were funded, 37 were rejected and 79 are pending.

OFFICE OF RESEARCH ADMINISTRATION

ORGANIZATION

OFFICE OF RESEARCH ADMINISTRATION

I. Organization

The Office of Research Administration was reorganized in May, 1985 upon retirement of the Grants/Contracts Administrator, Garth Frazier. The following description reflects the organization after that date.

The Office of Research Administration serves under the direction of the Office of the Provost and Academic Vice President, Jae R. Ballif, and his Associate Academic Vice President, Neal Lambert (thru June, 1985) and LaMond Tullis (July, 1985 and following). The Office consists of a Director, Associate Director, Technology Transfer Specialist (under contract) and Secretary, with part-time student assistance as needed.

II. Personnel

Director: Dr. John D. Lamb, Associate Professor of Chemistry

Associate Director: Carol R. Hardman

Technology Transfer Specialist: Lee R. Phillips

Secretary: Kaye L. Ashby

III. Responsibilities

A. Director

1. Represents the University's research programs to research organizations, funding agencies, and other universities
2. Develops policies and procedures to foster research and to facilitate technology transfer
3. Administers the university's patents and licensing of technologies and software
4. Coordinates the preparation of large, inter-collegiate and inter-institution research proposals
5. Administers the activities of the Office dealing with the management of grants and contracts

B. Associate Director

1. Manages the Research Administration Office and supervises office staff

2. Assists the Director in determining direction and policy for the Office of Research Administration
3. Assists the Director in presentation of workshops and seminars
4. Monitors office budget and expenditures
5. Coordinates publicity regarding research awards
6. Administers sponsored research contracts and grants and certifies all related expenditure documents
7. Monitors government regulations pertaining to federal contracts and grants
8. Assigns account numbers and records data on funded awards
9. Monitors research budget accounts in conjunction with Financial Services, to assure compliance with agency and university regulations and insure that corrective action is taken to avoid budgetary problems
10. Prepares and submits closeout documentation as grants and contracts terminate
11. Negotiates contracts and grants with funding agencies
12. Assists Financial Services with audits of contracts as required
13. Has responsibility for management of capital equipment on federal accounts and reports on such responsibility to funding agencies
14. Oversees compliance with federal regulations pertaining to the use of human subjects at the University
15. Disseminates information relating to funding trends and opportunities of interest including publication of a monthly newsletter
16. Maintains up-to-date reference files of funding sources, agency telephone numbers and addresses, and interests of BYU researchers
17. Assists researchers with budget preparation for proposals, preparation of representations and certifications as needed and coordination of authorizing signatures on required documents

C. Technology Transfer Specialist

1. Negotiates and prepares legal documents for licensing, contracting, marketing, and the development of technology and research at BYU
2. Assists University faculty/personnel in generating funds from outside sources for the patenting and development of their inventions
3. Secures legal counsel to actually prepare patents and help organize materials and persons so that a minimum of outside legal help is required
4. Organizes and administers the patents and license agreements that are held by BYU
5. Assists the Director and Associate Director in appropriate areas as needed

D. Secretary

1. Serves as the receptionist for the Office of Research Administration with specific responsibilities in handling the telephone and mail
2. Serves as personal secretary to the Director of Research Administration
3. Prepares and processes forms, reports, and correspondence for the Office of Research Administration
4. Maintains a log and file of pending proposals submitted to various agencies by BYU researchers
5. Obtains signatures, reproduce, distribute, and mail research proposals for faculty researchers as requested
6. Prepares and maintain Federal Time & Effort Reports for both faculty and students involved in federally sponsored research
7. Maintains files of research salary payments and associated paperwork for researchers paid from research accounts
8. Obtains signatures from the Associate Academic Vice President for proposals, contracts and agreements and other necessary items
9. Prepares a weekly agenda of contract/grant documents and a monthly activity report of proposals submitted, funded, and rejected for the Associate Academic Vice President
10. Supervises the part-time student clerks

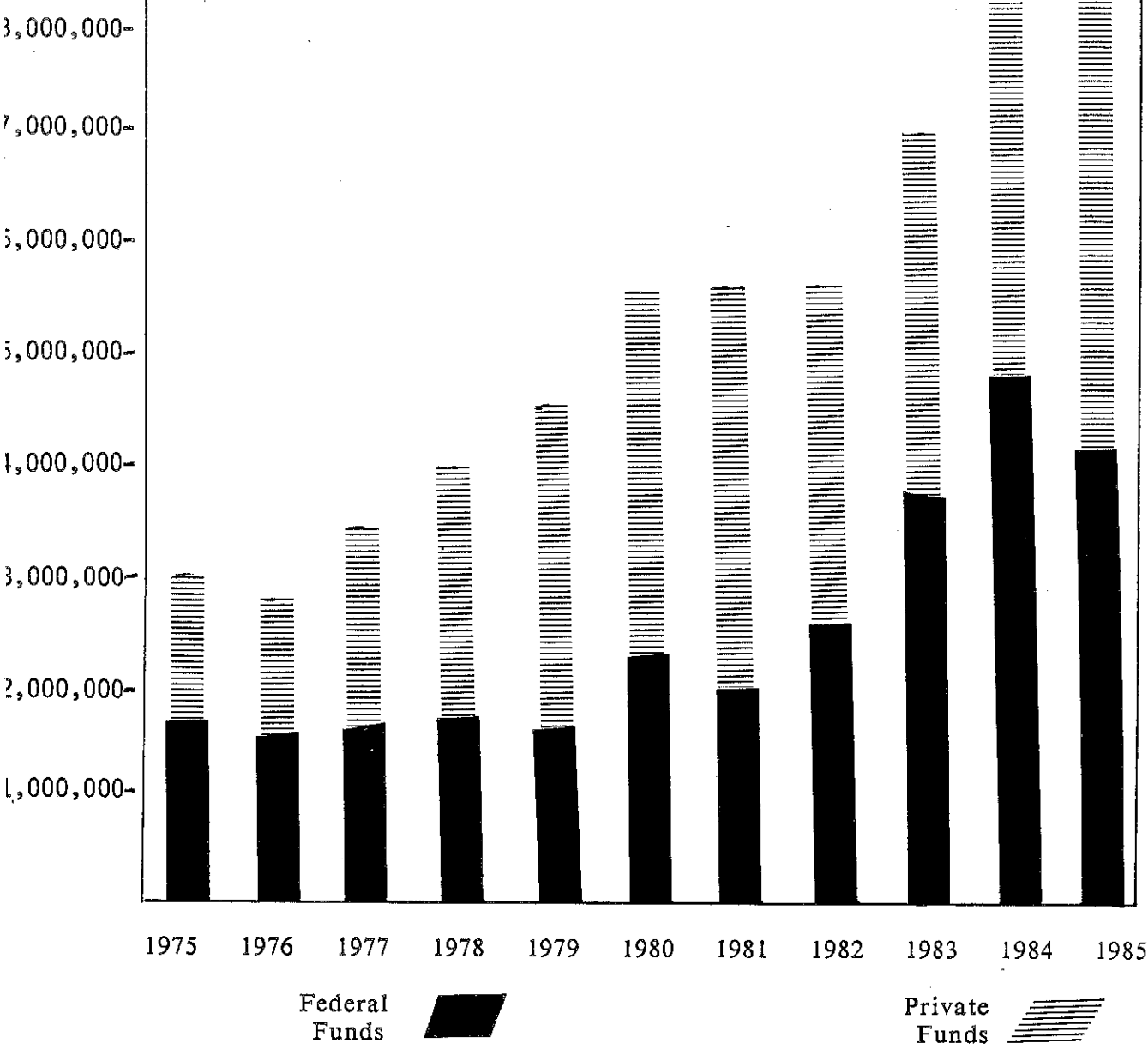
EXTERNAL FUNDS RECEIVED

EXTERNAL FUNDS RECEIVED/GRANTS & CONTRACTS

1975-1985

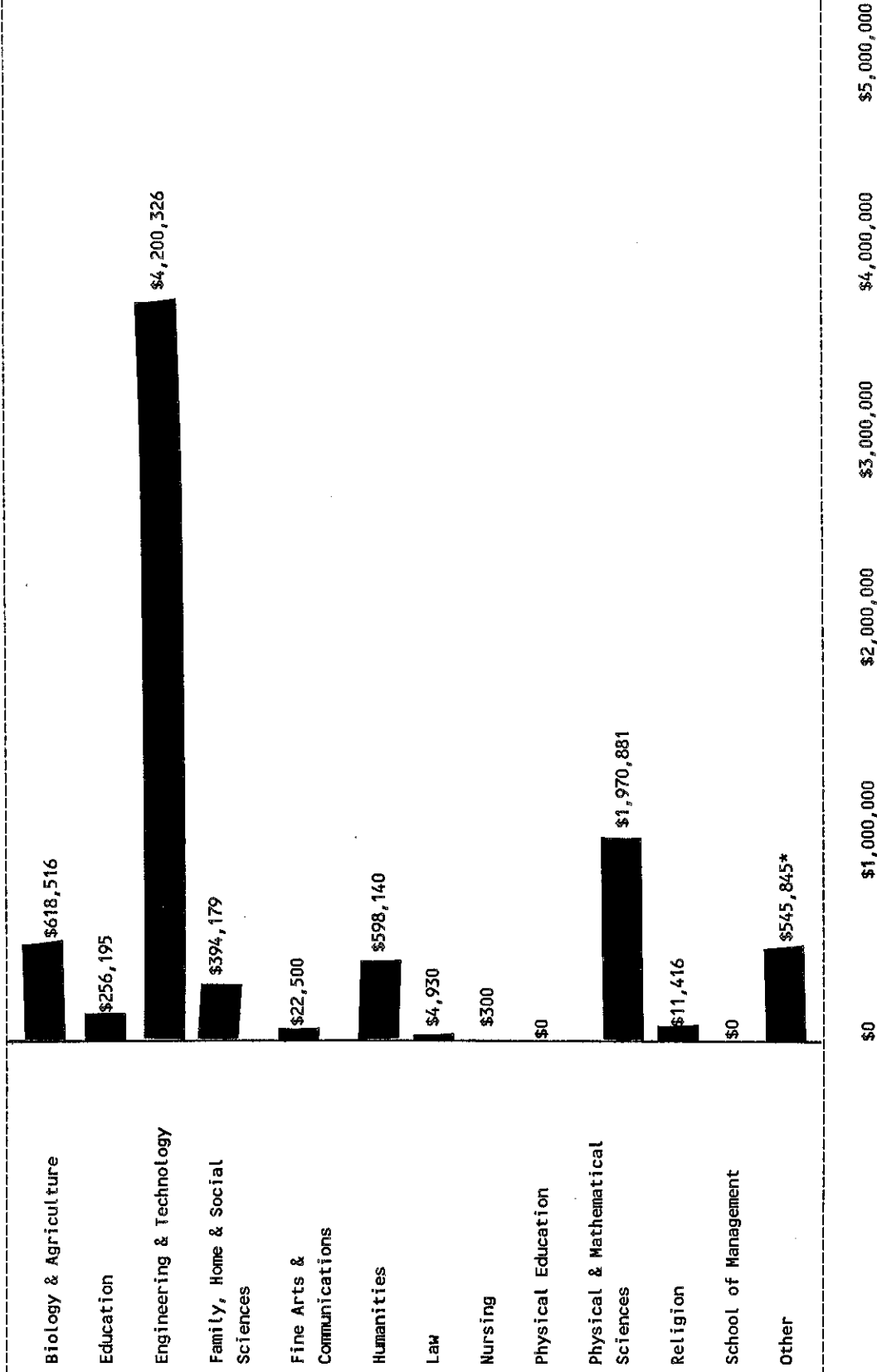
(September 1 - August 31)

Reporting Year	Federal	Private Dollars	Total	%Federal
1975	1,680,360	1,354,243	3,034,603	52%
1976	1,296,203	1,527,854	2,824,057	40%
1977	1,899,289	1,519,451	3,418,740	51%
1978	1,976,674	1,948,964	3,925,638	45%
1979	1,950,540	2,634,123	4,584,663	31%
1980	2,653,270	3,012,729	5,665,999	41%
1981	2,305,400	3,420,275	5,725,675	34%
1982	2,566,921	3,187,099	5,754,020	41%
1983	4,002,827	2,980,571	6,983,398	50%
1984	4,947,469	3,907,353	8,854,822	54%
1985	4,052,336	4,570,892	8,623,228	47%



EXTERNAL FUNDS RECEIVED ACCORDING TO COLLEGE
 FOR THE YEAR BEGINNING SEPTEMBER 1, 1984 - AUGUST 31, 1985

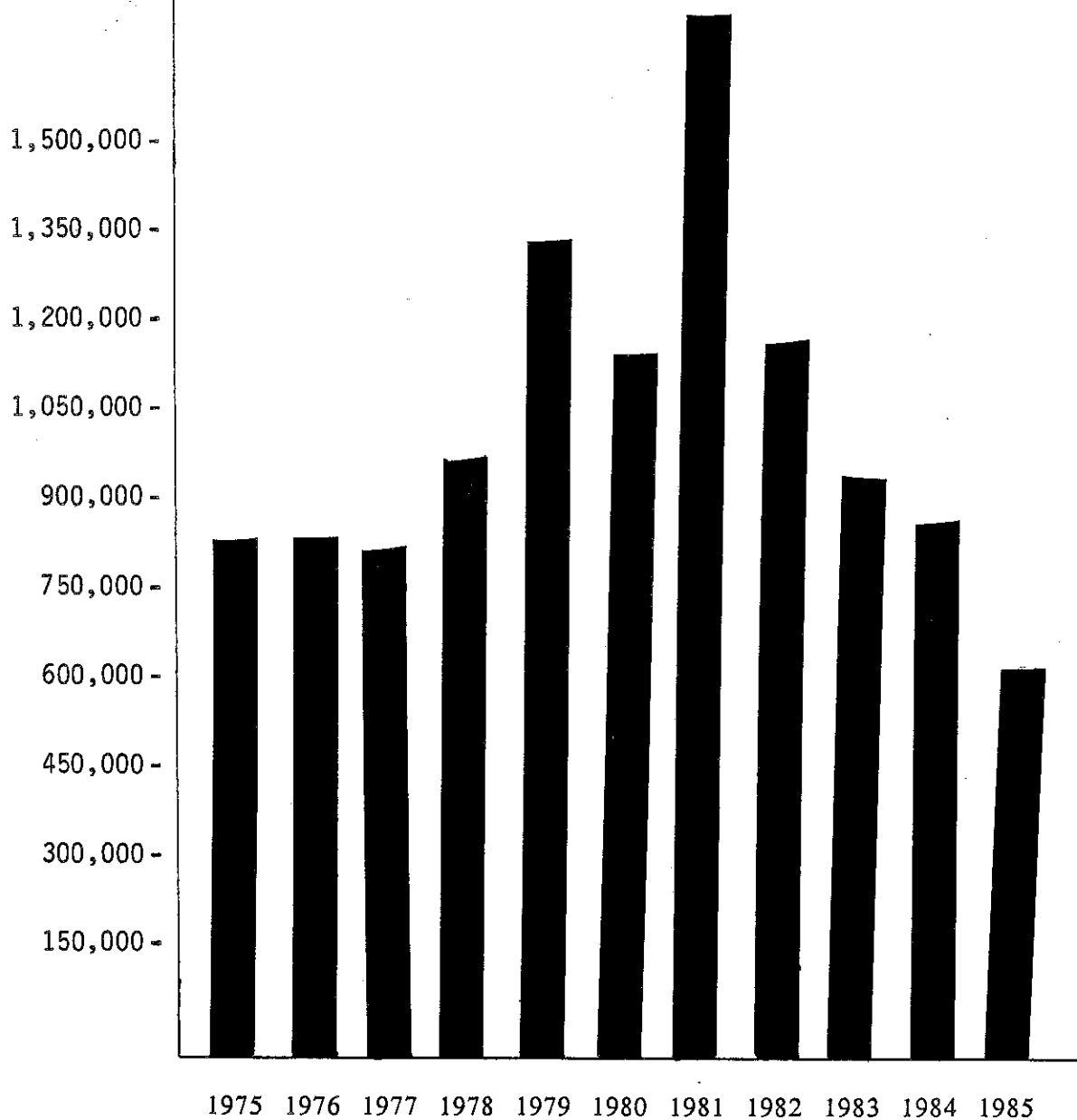
Dollars Received



* Thermochemical Institute \$ 545,845

**EXTERNAL FUNDS RECEIVED BY
COLLEGE OF BIOLOGY & AGRICULTURE**

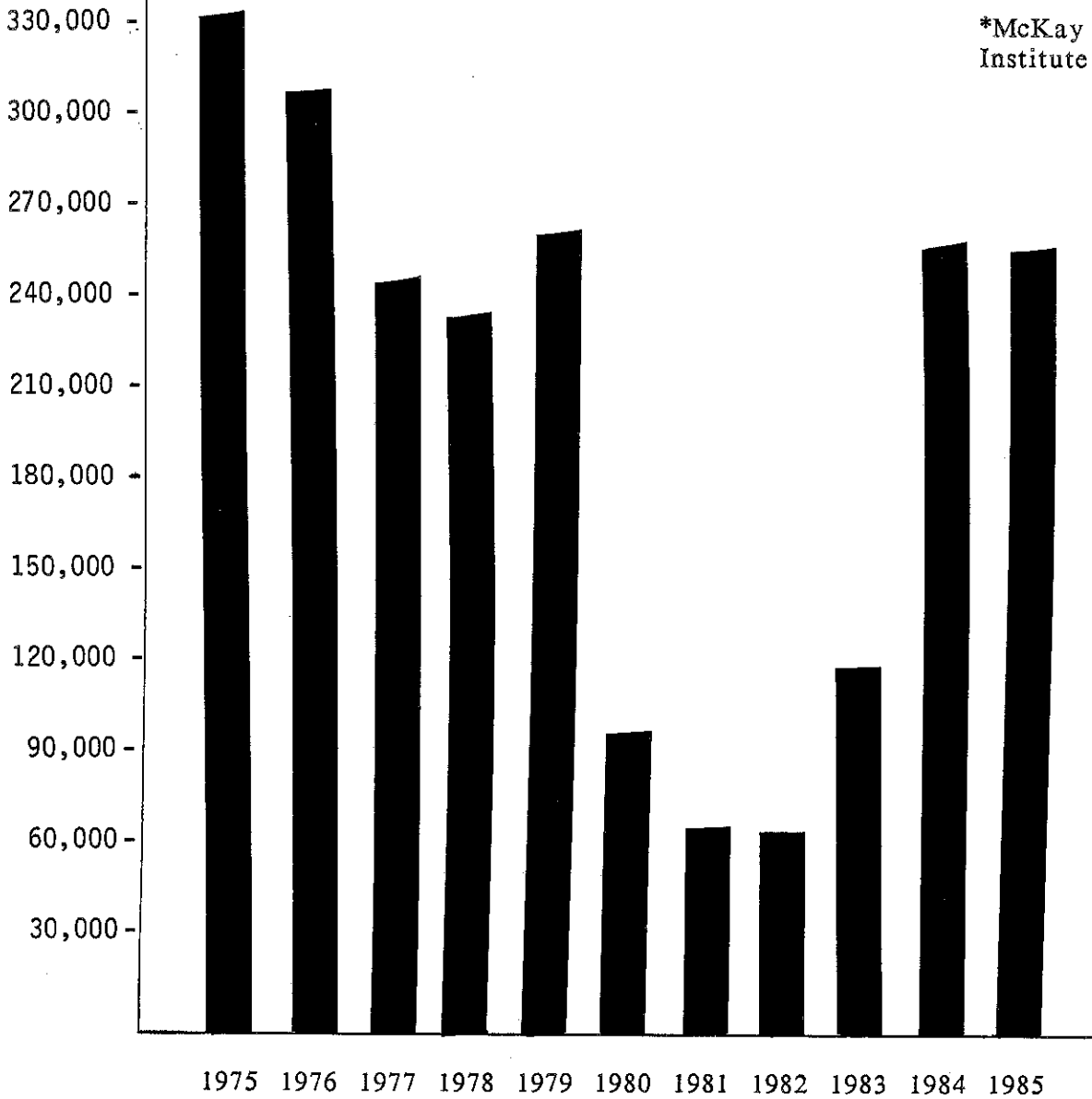
Reporting Year	Federal	Private	Total
1975	341,940	461,807	803,747
1976	408,343	417,748	826,091
1977	345,393	433,740	779,133
1978	637,768	458,587	1,096,355
1979	786,778	542,525	1,329,303
1980	562,351	550,213	1,112,564
1981	484,985	1,253,576	1,738,561
1982	255,474	899,976	1,155,450
1983	594,845	321,768	916,613
1984	248,075	564,417	812,492
1985	94,197	524,319	618,516



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF EDUCATION**

Reporting Year	Federal	Private	Total
1975	170,631	161,732	332,363
1976	51,100	260,579	311,679
1977	47,000	195,400	242,400
1978	71,000	163,165	234,165
1979	44,118	206,544	250,662
1980	0	90,730	90,730
1981	0	59,000	59,000
1982	0	47,500	47,500
1983	74,678	35,120	109,798
1984	173,521	87,800	261,321*
1985	157,735	98,460	256,195



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF ENGINEERING & TECHNOLOGY**

Reporting Year	Federal	Private	Total
1975	611,808	391,347	1,003,155
1976	136,841	298,251	435,092
1977	561,049	429,871	990,920
1978	668,809	599,850	1,268,659
1979	359,720	1,016,569	1,376,289
1980	934,490	1,162,250	2,096,740
1981	786,432	776,271	1,562,703
1982	1,021,333	1,170,170	2,191,503
1983	717,784	1,510,074	2,227,858
1984	1,345,077	2,305,560	3,650,637
1985	1,622,373	2,577,953	4,200,326

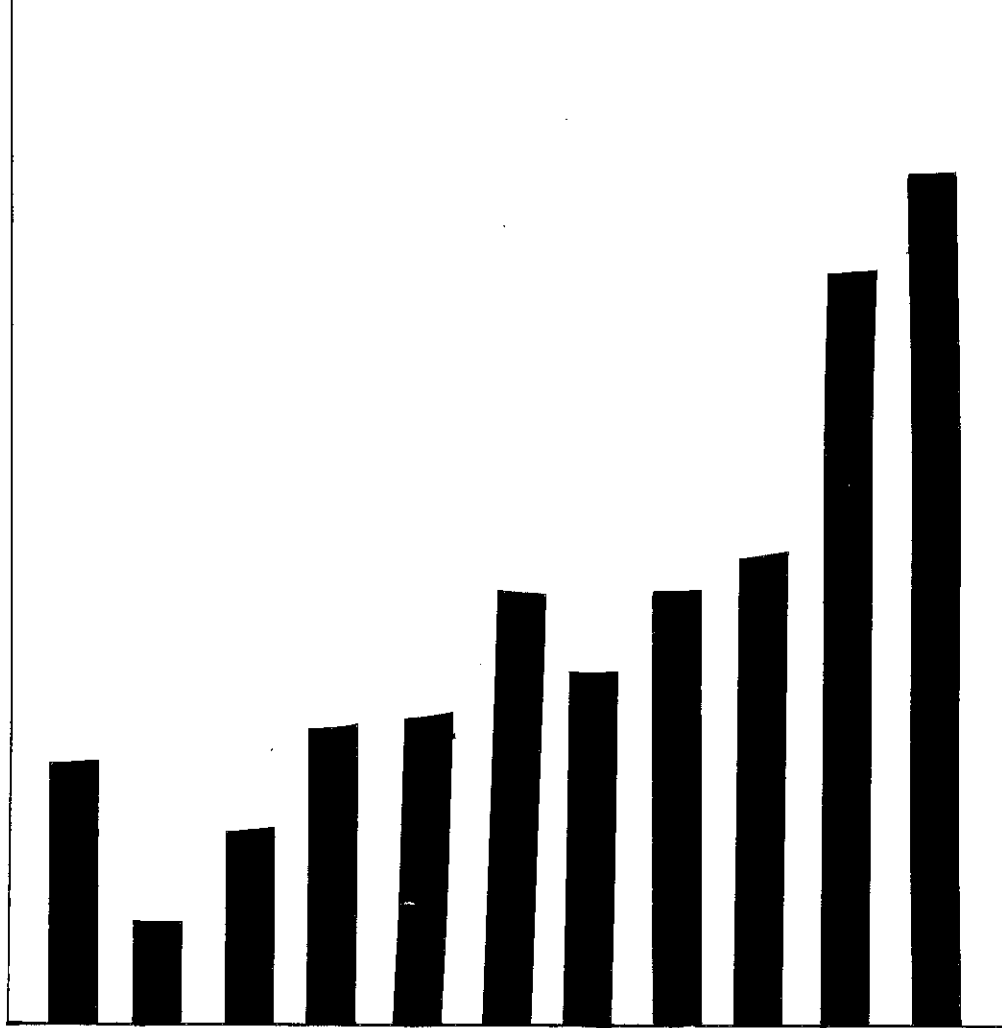
5,000,000 -

4,000,000 -

3,000,000 -

2,000,000 -

1,000,000 -

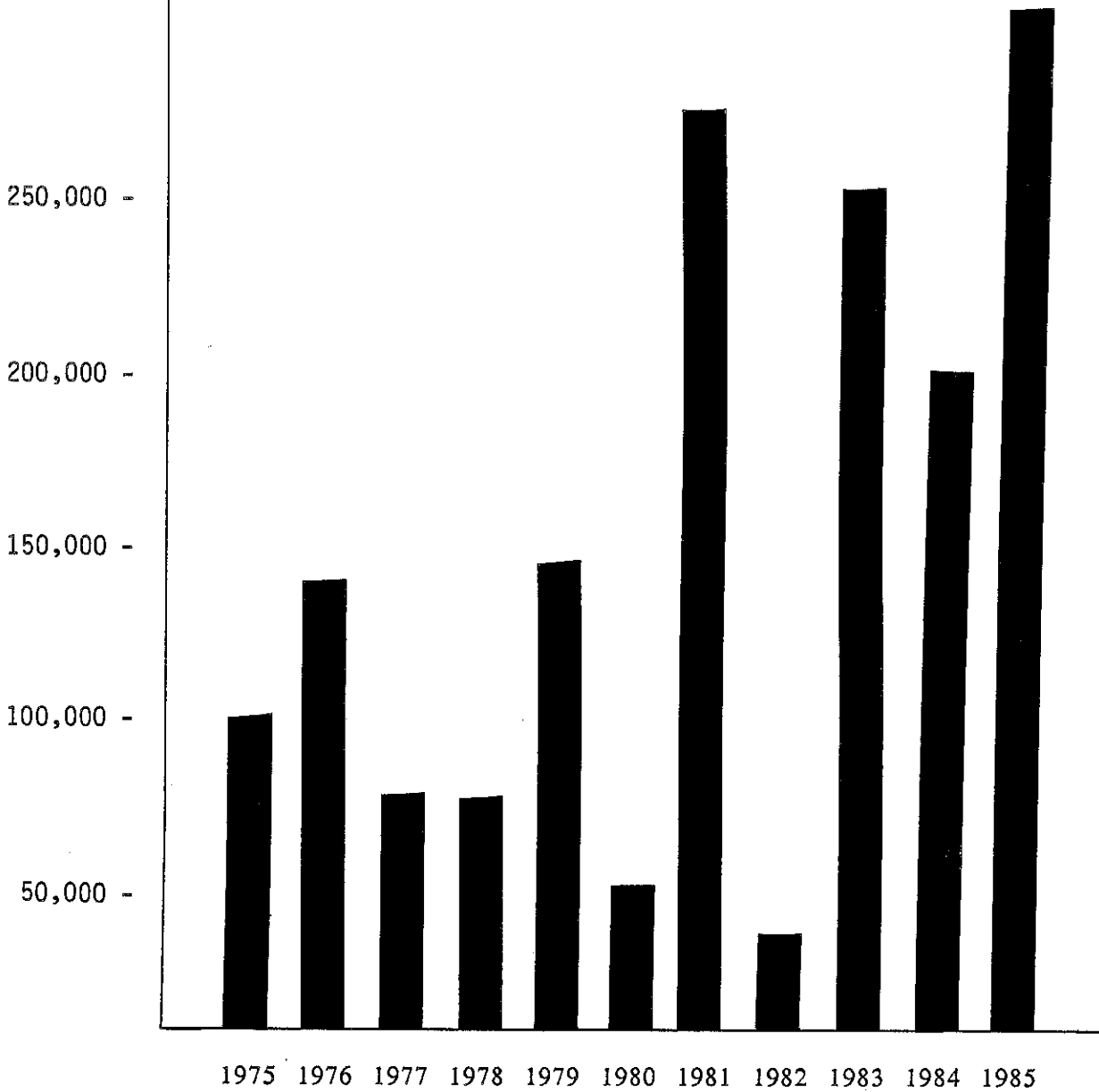


1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985

Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF FAMILY, HOME & SOCIAL SCIENCES**

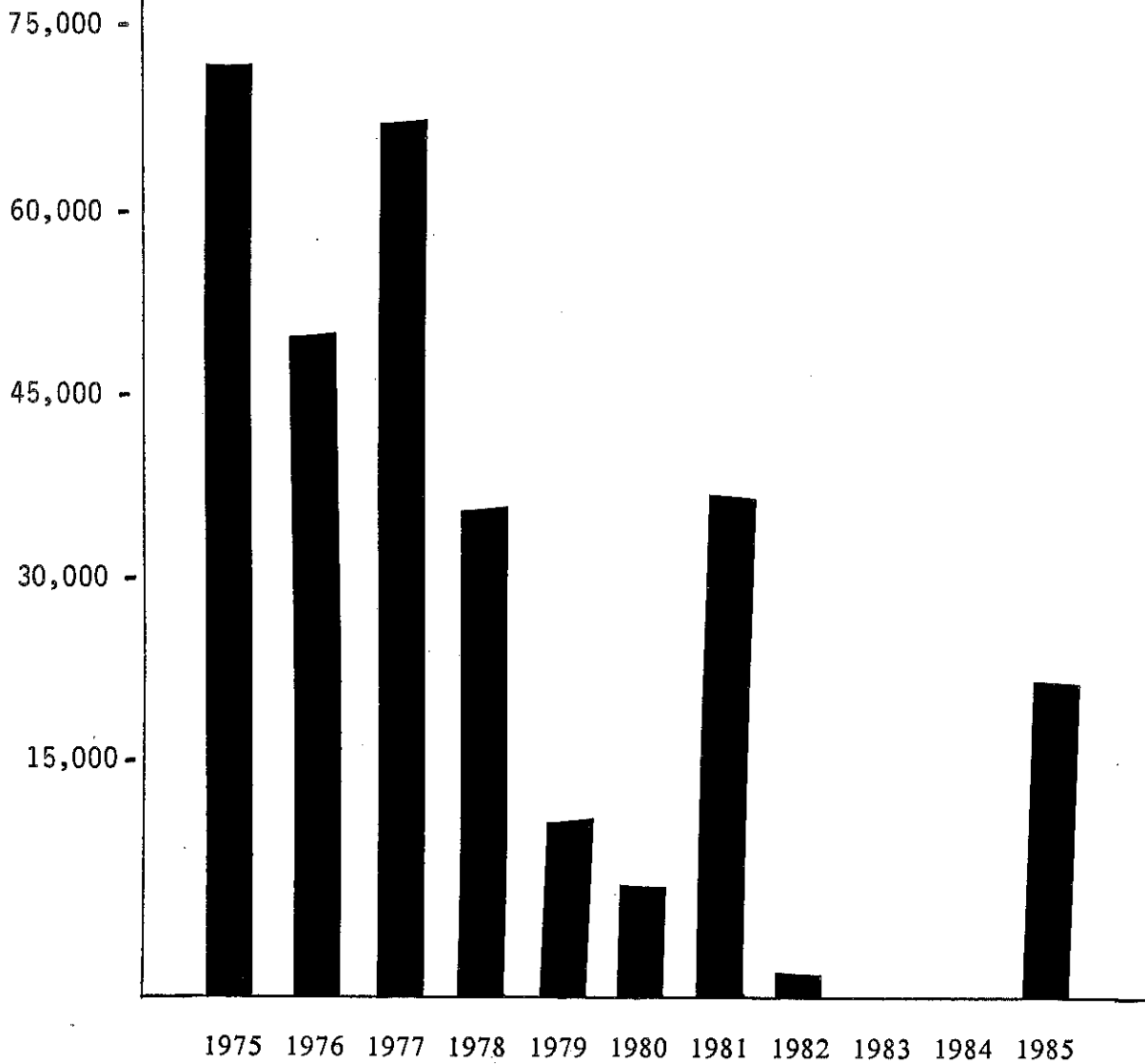
Reporting Year	Federal	Private	Total
1975	26,379	63,159	89,538
1976	19,272	115,034	134,306
1977	5,330	64,711	70,041
1978	27,380	48,553	75,933
1979	36,732	99,777	136,509
1980	40,360	941	41,301
1981	58,786	213,741	272,527
1982	17,087	10,545	27,632
1983	179,437	69,129	248,566
1984	185,423	6,697	192,120
1985	226,478	167,701	394,179



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF FINE ARTS & COMMUNICATIONS**

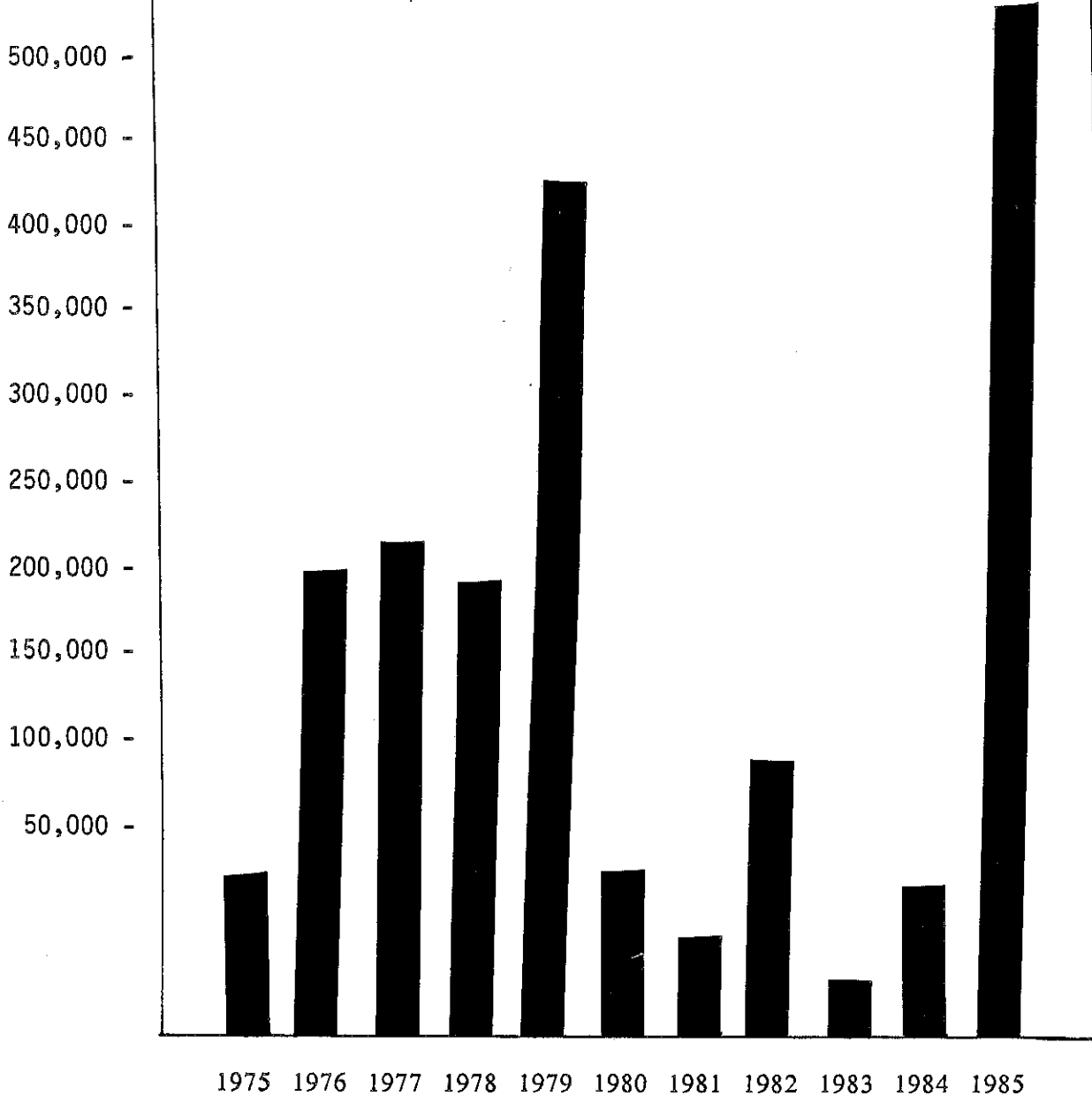
Reporting Year	Federal	Private	Total
1975	21,984	48,500	70,484
1976	35,000	14,340	49,340
1977	22,355	43,850	66,205
1978	7,415	26,500	33,915
1979	4,000	6,500	10,500
1980	0	4,356	4,356
1981	0	35,000	35,000
1982	0	250	250
1983	0	0	0
1984	0	0	0
1985	0	22,500	22,500



Year Ending
August 31, 1985

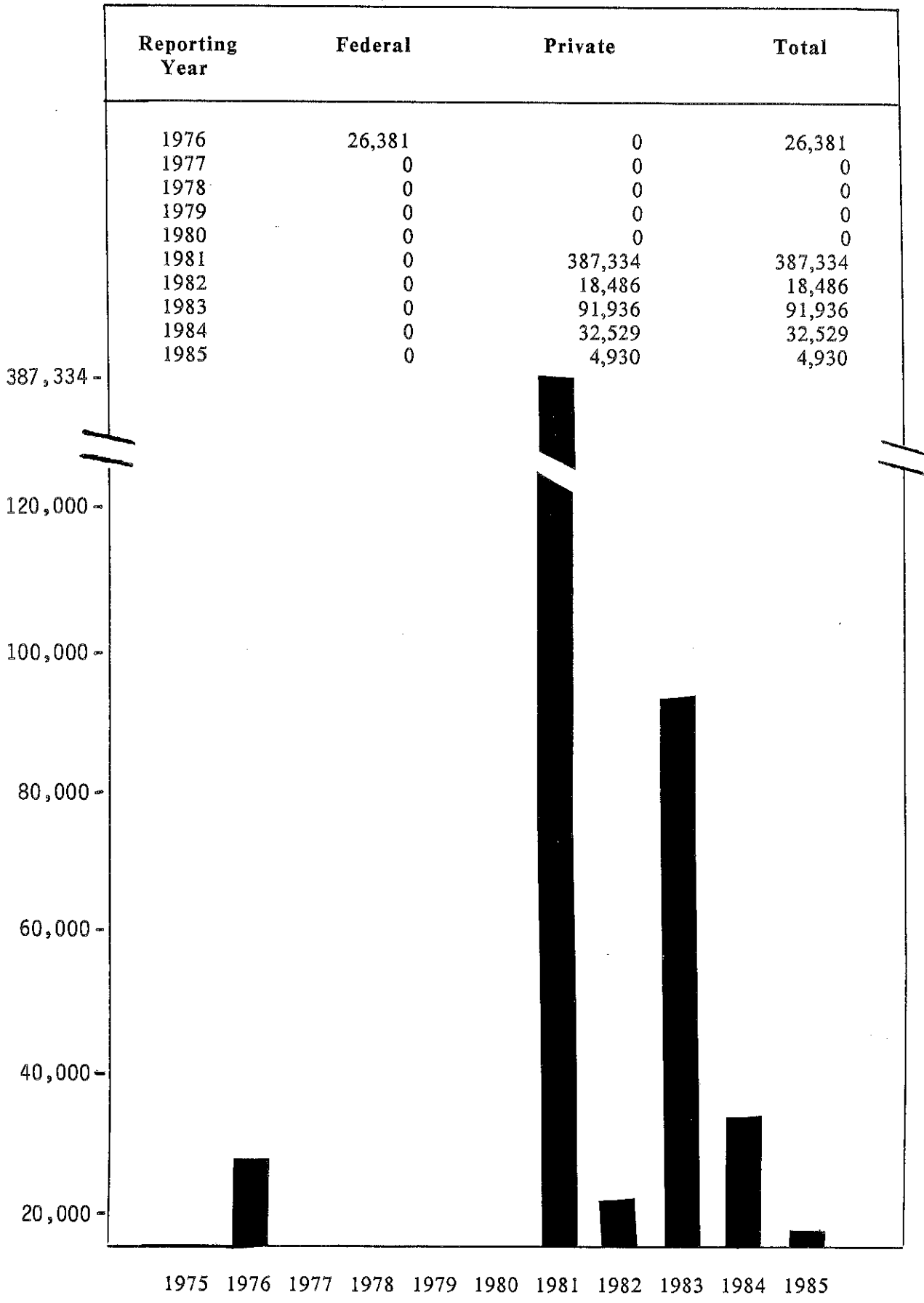
**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF HUMANITIES**

Reporting Year	Federal	Private	Total
1975	0	30,225	30,225
1976	10,074	185,400	195,474
1977	0	203,711	203,711
1978	0	193,585	193,585
1979	500	416,283	416,783
1980	20,000	18,032	38,032
1981	0	13,662	13,662
1982	68,131	21,255	89,386
1983	0	5,000	5,000
1984	30,029	0	30,029
1985	578,640	19,500	598,140



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
LAW SCHOOL**



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF NURSING**

Reporting Year	Federal	Private	Total
1985	0	300	300

3,000 -
2,500 -
2,000 -
1,500 -
1,000 -
500 -



1985

Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF PHYSICAL EDUCATION**

Reporting Year	Federal	Private	Total
1975	17,000	3,800	20,800
1976	0	600	600
1977	2,900	0	2,900
1978	0	24,700	24,700
1979	0	30,000	30,000
1980	0	1,500	1,500
1981	0	9,378	9,378
1982	0	29,800	29,800
1983	0	7,890	7,890
1984	0	0	0
1985	0	0	0

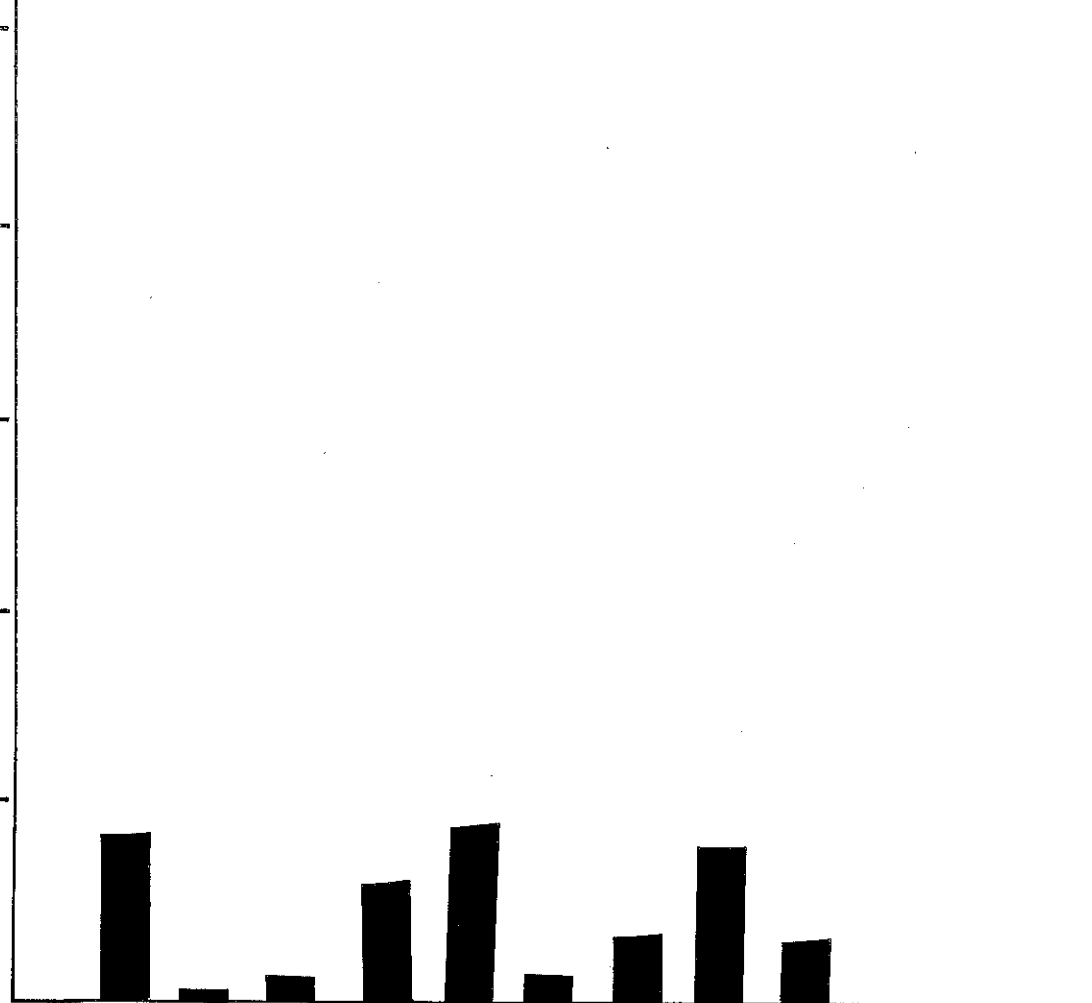
200,000 -

160,000 -

120,000 -

80,000 -

40,000 -

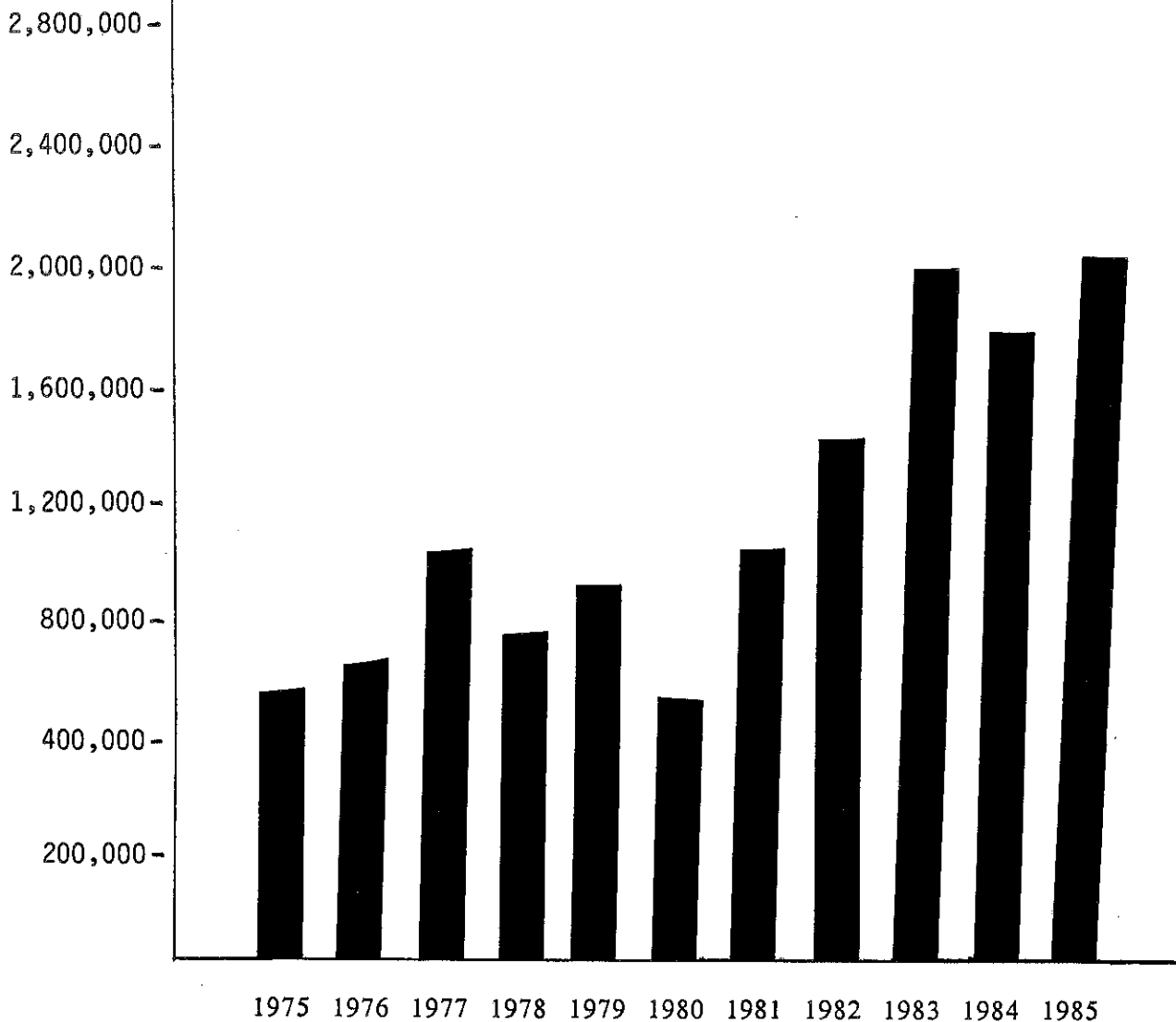


1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985

Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY THE
COLLEGE OF PHYSICAL & MATHEMATICAL SCIENCES**

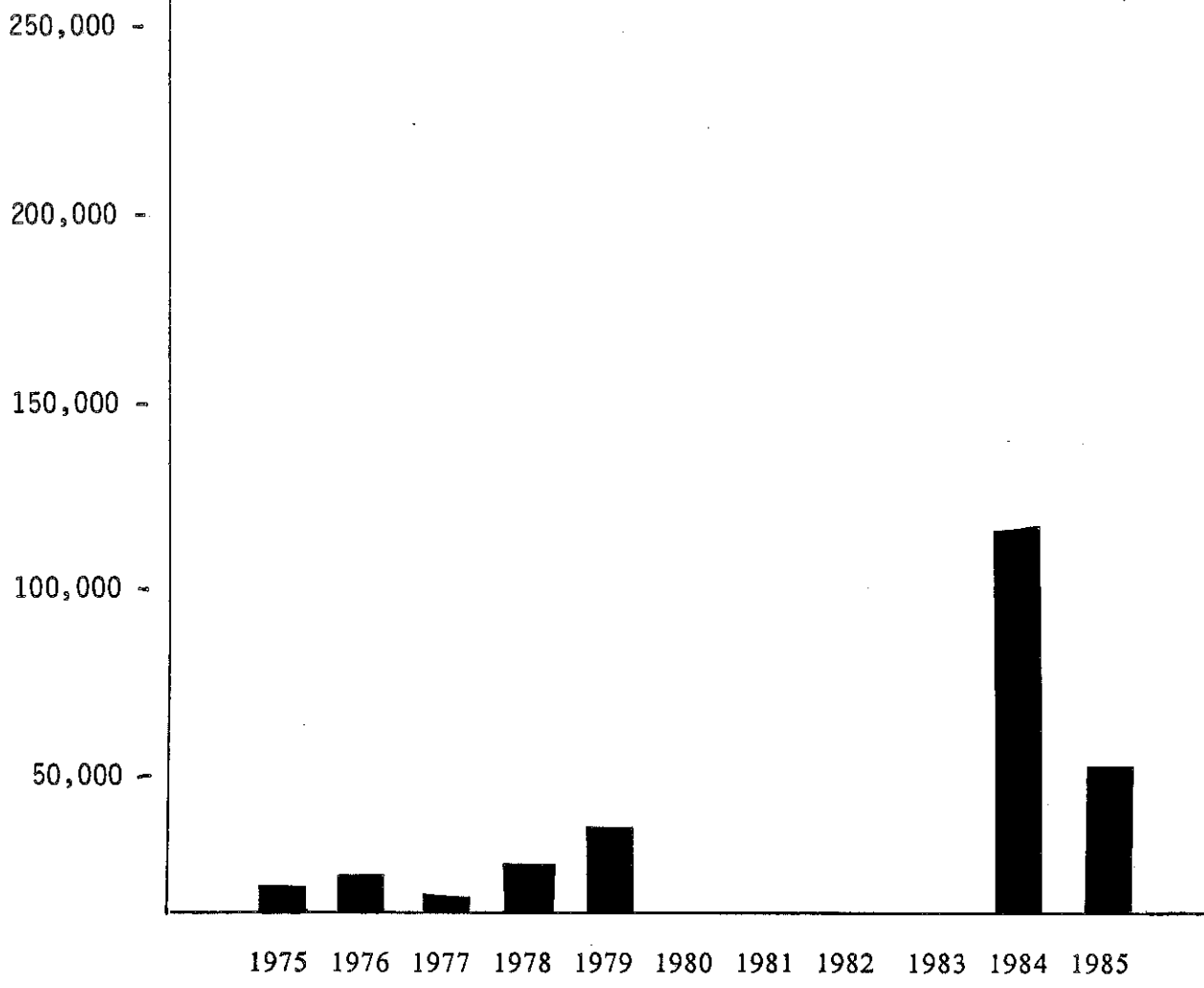
Reporting Year	Federal	Private	Total
1975	443,448	107,877	551,325
1976	517,506	90,736	608,242
1977	862,743	67,445	930,188
1978	483,508	205,235	688,743
1979	619,180	244,367	863,547
1980	420,196	11,846	432,042
1981	782,781	244,831	1,027,612
1982	890,832	473,678	1,364,510
1983	1,426,542	519,663	1,946,205
1984	1,229,354	655,891	1,885,245
1985	1,147,942	822,939	1,970,881



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY
RELIGIOUS INSTRUCTION**

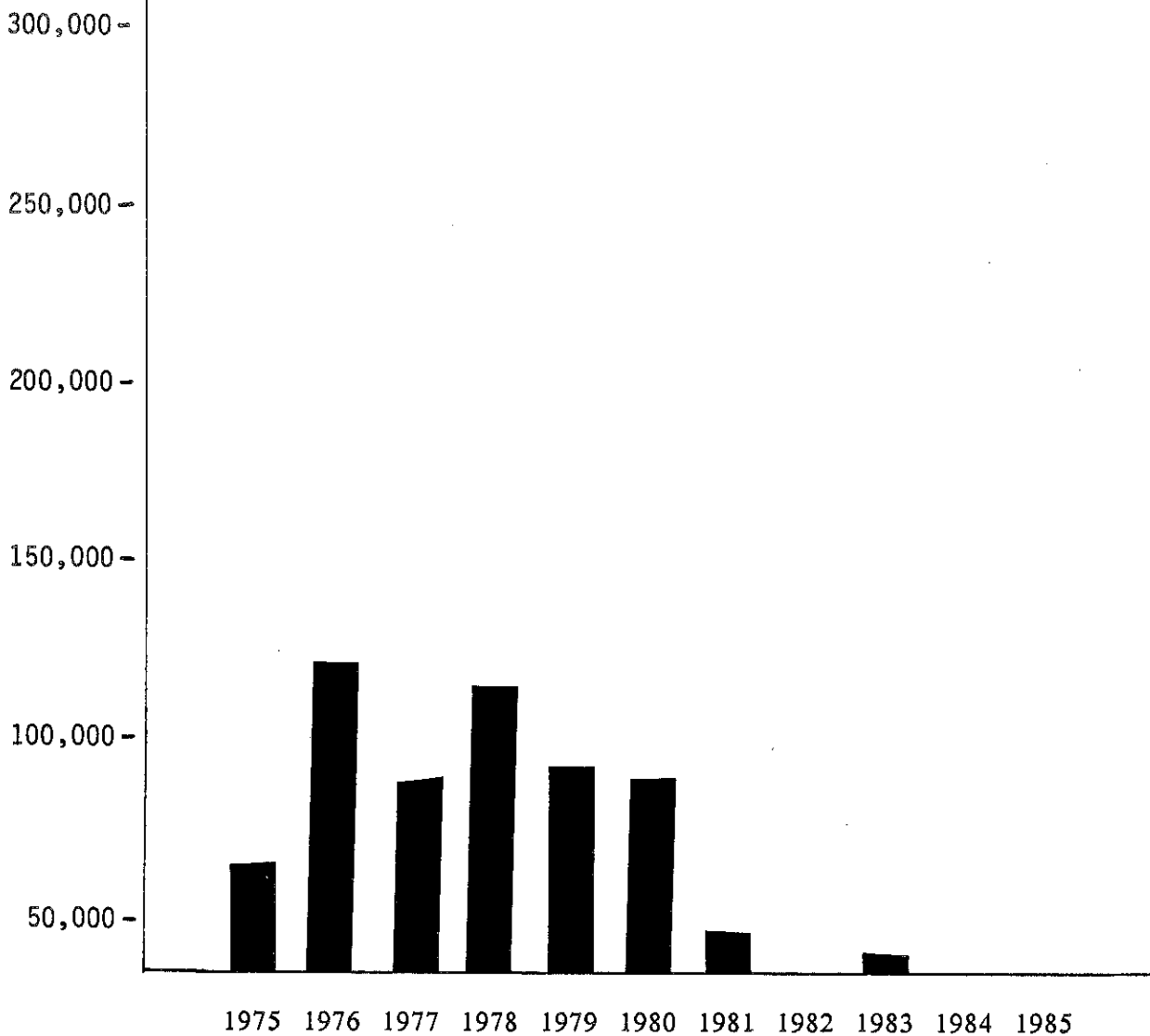
Reporting Year	Federal	Private	Total
1975	0	5,000	5,000
1976	0	5,750	5,750
1977	0	2,000	2,000
1978	0	7,000	7,000
1979	0	18,713	18,713
1980	0	0	0
1981	0	0	0
1982	0	0	0
1983	0	0	0
1984	122,350	0	122,350
1985	0	11,416	11,416



Year Ending
August 31, 1985

**EXTERNAL FUNDS RECEIVED BY
THE SCHOOL OF MANAGEMENT**

Reporting Year	Federal	Private	Total
1975	16,788	41,606	58,394
1976	4,353	112,748	117,101
1977	27,904	50,000	77,904
1978	52,584	58,000	110,584
1979	78,700	0	78,700
1980	81,541	0	81,541
1981	18,428	6,000	24,428
1982	0	0	0
1983	9,200	250	9,450
1984	0	0	0
1985	0	0	0



Year Ending
August 31, 1985

RESEARCH GRANT/CONTRACT AWARDS

BY COLLEGE AND DEPARTMENT

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
<u>BIOLOGY & AGRICULTURE</u>					
<u>Agricultural Economics</u>					
Arden Pope	Forest Service	Economics of Range Evaluation	1 year	F	<u>12,000</u>
			Department Total		12,000
<u>Botany & Range Science</u>					
Darrell Weber	Rogers Brothers Seed Co.	Plant Research	1 year	P	500
Paul Cox	Nat'l Science Foundation	Presidential Young Investigator Award	1 year	F	25,000
Paul Cox	Donor & Matching Funds	Presidential Young Investigator Award	1 year	P	20,000
Steven Whisenant	National Park Service	Fire Effects on Mixed-Grass Community	1 year	F	<u>9,320</u>
			Department Total		54,820
<u>Food Science & Nutrition</u>					
Clayton Huber	LDS Church	Quality Assurance Laboratory	1 year	P	105,581
Clayton Huber	Pioneer Potato Co.	New Food Product Studies	1 year	P	<u>1,000</u>
			Department Total		106,581
<u>Microbiology</u>					
Marcus Jensen	State of Utah	Turkey Enteritis Studies	1 year	P	11,178
Marcus Jensen	Schering Corporation	Turkey Vaccine Research	open	P	6,566
Marcus Jensen	Utah Turkey Mkt. Board	Turkey Disease Studies	open	P	<u>5,500</u>
			Department Total		23,244
<u>Zoology</u>					
Robert Winget	State of Utah	Macroinvertebrate Water Sampling	1 year	P	10,000
Robert Winget	Utah Power & Light	Boron Removal Treatment	9 months	P	10,000
Robert Winget	Forest Service	Uintah Projects	open	F	25,938

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
William Winder	National Institutes of Health	Control of Liver Metabolism	39 months	F	<u>21,939</u>
		Department Total			67,877
		COLLEGE TOTALS			264,522
<u>EDUCATION</u>					
<u>Educational Psychology</u> Russell Osguthorpe	Department of Education	Handicapped Children as Tutors	3 Years	F	<u>107,735</u>
		Department Total			107,735
<u>Educational Administration</u>					
Edward Green	LDS Church	Curriculum Development for MTC	8 months	P	<u>34,977</u>
		Department Total			34,977
<u>Instructional Science</u>					
William Quinn	LDS Church	Curriculum Development for MTC	8 months	P	27,601
William Quinn	Provo Rotary	Student Research	10 months	P	<u>360</u>
		Department Total			27,961
		COLLEGE TOTAL			170,673
<u>ENGINEERING & TECHNOLOGY</u>					
<u>Chemical Engineering</u> Calvin Bartholomew	Department of Energy	Metal Support Interactions	6 years	F	79,879
L. Douglas Smoot	Babcock & Wilcox	Modeling of Surfaces	open	P	15,000

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
L. Douglas Smoot	Department of Energy	Entrained Flow Gasification	2 year	F	454,891
L. Douglas Smoot	DOE-Grand Forks	Oxidation Rates & Explosive Limits	27 months	F	98,693
L. Douglas Smoot	DOE(Energy Consortium)	Detailed Model of Pulverized Coal	4 years	P	268,798
Richard Rowley	Department of Energy	Liquid Mixture Conductivity Viscosity	2 years	F	34,000
Paul Hedman	Department of Energy	Anti-Stokes Raman Spectrometer	2 years	F	221,190
L. Douglas Smoot	Utah Power & Light	Combustion Research Services	10 months	P	21,000
Calvin Bartholomew	Provo Rotary	Student Research	10 months	P	128
L. Douglas Smoot	Utah Power & Light	Monitoring Coal Quality Effects	3 months	P	11,161
L. Douglas Smoot	DOE-Pittsburgh	Coal Structure/Pulverized Coal	16 months	F	80,000
L. Douglas Smoot	EPRI	Energy Consortium	5 months	P	40,000
R. Izatt/J. Christensen	Department of Energy	Organic Compound Interaction	39 months	F	100,000
Department Total					1,424,740
<u>Civil Engineering</u>					
Leslie Youd	Army Corp of Engineers	Study of Pleistocene Sediment	10 months	F	25,000
Michael Stephenson	NASA	Raster Graphics Subroutine Package	1 year	F	64,940
Leslie Youd	U.S. Army	Mapping Liquefiable Layers	9 months	F	24,984
Stan Klemetson	Springville City	Waste Water Disposal Studies	open	P	11,025
Michael Stephenson	U.S. Navy	Processor for 3-Dimensional Finite	3 years	F	260,334
Steven Benzley	Sandia Labs	Integration of CAEDM Hardware	1 year	P	38,878
Glen Thurgood	Dept. of Transportation	Preparation of FHWA Workshop	5 months	F	12,181
Michael Stephenson	Sandia Labs	Display for 3-D Fluid Flow Studies	8 months	P	25,111
Michael Stephenson	Hughes Aircraft	Data Base Enhancements to MOVIE.BYU	3 months	P	17,260
Bruce Nay	Rockwell International	Installation of MOVIE.BYU Tektronix	3 months	P	2,100
Arnold Wilson	Hess Pumice Products	Pozzolanic Activity of Malad Pumice	5 months	P	2,000
Thomas Sederberg	General Electric	Piecewise Algebraic Volumes	9 months	P	35,508
Woodruff Miller	Bureau of Reclamation	VICAR Satellite Data Analysis		F	4,800
Glen Thurgood	Dept. of Transportation	Pavement Rehabilitation	5 months	F	3,955
Thomas Sederberg	Control Data Corporation	Computation of Interactions	2 years	P	60,000
Woodruff Miller	Utah Dept of Agriculture	Land Use Analysis by LANDSAT Data	2 months	P	3,000
Woodruff Miller	Utah Dept of Agriculture	Process Satellite Image at Lake Powell	1 month	F	3,030

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
Steven Benzley	Morton Thiokol	Data Transfer/Solid Modeling Packages	1 year	P	10,000
Leslie Youd	EPRI	Soil Settlement & Dynamic Strain	2 months	P	10,000
Lynn Wallace	AMMA Research Foundation	Unaccounted for Water	1 year	P	29,981
Steven Benzley	Naval Weapons Center	Development of Target Codes	9 months	F	<u>9,481</u>
Department Total					653,568
<u>Electrical Engineering</u>					
Douglas Chabries	FBI	Testing & Evaluation of Sensor	open	F	9,517
Douglas Chabries	FBI	Anechoic Test Chamber	open	F	2,500
Douglas Chabries	Hughes Aircraft	Hydrophone Signal Estimation	18 months	P	30,000
Wynn Stirling	Naval Electronics Systems	Space-Time Algorithm	1 year	F	<u>54,998</u>
Department Total					97,015
<u>Mechanical Engineering</u>					
Ed Red	Boeing	Generic Geometrical Data Bases	1 year	P	27,200
Craig Smith	Boeing	Modeling of Machining Processes	4 months	P	27,200
Ken Chase	Boeing	Computer Aided Tolerance Selection	open	P	8,000
Howard Heaton	Garrett Turbine	Graduate Student Support	1 year	P	13,000
Brent Adams	Natl Science Foundation	Young Investigator Awards	1 year	F	25,000
Brent Adams	ALCOA	On Line Texture Monitoring-Aluminum	6 months	P	67,251
Brent Adams	Department of Energy	Grain Boundary Structure Disposition	1 year	F	53,000
Ed Red	Boeing	Generic Geometrical Data Bases	1 year	P	7,440
Brent Adams	Donor & Matching Funds	Presidential Young Investigator Award	1 year	P	40,000
Geoff Germane	Angus Chemical	Nitromethane in Internal Combustion	8 months	P	21,021
Alan Parkinson	Garrett Turbine	Disk Design of OPTIMIZATION	7 months	P	15,000
Alan Parkinson	Garrett Turbine	Blade Heat Transfer Data	4 months	P	13,121
Ken Chase	Garrett Pneumatic	Systematic Tolerance Selection	1 year	P	8,000
Ken Chase	Sandia Labs	Systematic Tolerance Selection	1 year	P	<u>8,000</u>
Department Total					333,233

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
<u>Technology</u> Ronald Millett Greg Jensen	LDS Church Kennametal Inc.	Rapid Keyword Retrieval Module CAD Cutting Tool Library	2 months 11 months	P P	19,900 <u>90,570</u>
		Department Total			110,470
		COLLEGE TOTAL			2,619,026
<u>FAMILY, HOME & SOCIAL SCIENCES</u>					
<u>Economics</u> James McDonald	Natl Science Foundation	Statistical Distributions in Models	6 months	F	<u>29,197</u>
		Department Total			29,197
<u>Family Sciences</u> Terrance Olson	Department of Health & Human Resources	Family Centered Prevention	1 year	F	<u>157,969</u>
		Department Total			157,969
<u>Geography</u> Richard Jackson	State of Utah	Analysis of Landsat Data	3 months	P	<u>2,000</u>
		Department Total			2,000
<u>Psychology</u> Larry Wood	National Institutes of Health	Imagery as an Aid to Memory in Elderly	1 year	F	18,012
Gary Burlingame	National Institutes of Health	Factors in Group Psychotherapy	1 year	F	<u>21,300</u>
		Department Total			39,312

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
<u>Family & Demographic Research Institute</u>					
Stephen Bahr	Provo Rotary	Student Research	10 months	P	<u>300</u>
		Department Total			300
		COLLEGE TOTAL			228,778
<u>FINE ARTS & COMMUNICATIONS</u>					
<u>Art</u>					
Wulf Barsch	Alumni Assoc.	Maeser Award	open	P	<u>5,000</u>
		Department Total			5,000
		COLLEGE TOTAL			5,000
<u>HUMANITIES</u>					
<u>Asian Near-Eastern Languages</u>					
David Montgomery	National Security Agency	A Concise Uzbek-English Dictionary	6 months	F	61,574
Robert Russell	Department of Education	Japanese Language Instruction	2 years	F	<u>33,857</u>
		Department Total			95,431
<u>Humanities Research Center</u>					
Jerry Larson	Department of Education	Computerized Adaptive Testing	1 year	F	28,340
Frank Otto	Department of Defense	Foreign Language Technologies	33 months	F	374,971
Junius Bennion	Department of Defense	Interactive Video Disc Development	1 year	F	<u>79,898</u>
		Department Total			483,209

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
<u>English</u> Marilyn Arnold	Alumni Association	Maeser Award	open	P	<u>5,000</u>
			Department Total		5,000
			COLLEGE TOTAL		583,640
<u>LAW SCHOOL</u> Larry Farmer	Remington Stevens	Computer Assisted Practice System	open	P	<u>4,930</u>
			COLLEGE TOTAL		4,930
<u>NURSING</u> June Leifson	Provo Rotary	Student Research	9 months	P	<u>300</u>
			COLLEGE TOTAL		300
<u>PHYSICAL & MATHEMATICAL SCIENCES</u>					
<u>Chemistry</u> Milton Lee	Nat'l Science Foundation	Supercritical Fluid Chromatography	30 months	F	74,292
Milton Lee	Department of Energy	Sulfur Heterocycles in Coal Liquids	3 years	F	27,266
Byron Hunter	Uniroyal	Development of Blowing Agents	1 year	P	30,511
Earl Woolley	American Chemical So.	Heat Capacities at Elevated Temps.	3 years	P	17,500
Juliana Boerio-Goates	American Chemical So.	Thermodynamic Studies of Organic Solid	2 years	P	3,000
Milton Lee	Coord. Research Council	Polar Organic Chemical Species	15 months	P	45,387
Milton Lee	Department of Energy	Supercritical Fluid Chromatography	30 months	F	50,000
Milton Lee	Gas Research Institutes	Characterization of Coal Macerals	3 years	P	120,000
Paul Farnsworth	Nat'l Science Foundation	Inductively Coupled Plasma	18 months	F	63,507
Don Robertson	U.S. Army	Rona Techniques for Anthrax Vaccine	41 months	F	222,649

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
Delbert Eatough	DOE-Pittsburgh	Determination of the Heat of Mixing	2 months	F	4,950
Delbert Eatough	So. California Edison	Nitric Acid Study	8 months	P	38,880
Lee Hansen	Merck, Sharpe & Dohme	Drug Decomposition	open	P	8,950
Delbert Eatough	AeroVironment	Long Range Tracers of Plumes	1 year	P	79,690
Delbert Eatough	Hart Scientific	Rental Lease Agreement	1 year	P	<u>175,310</u>
		Department Total			961,892
<u>Computer Science</u>					
Vern Crandall	IBM	Computer Verification	open	P	20,400
Duane Call	Computer Systems Architect	Ultra-High Speed Numerical Processor	1 year	P	46,382
Robert Burton	Alumni Association	Maeser Award	open	P	<u>5,000</u>
		Department Total			71,782
<u>Geology</u>					
Bart Kowallis	US Geological Survey	Fission-Track Dating/Igneous Rocks	6 months	F	<u>3,440</u>
		Department Total			3,440
<u>Physics</u>					
Douglas Jones	Jet Propulsion Lab	Interpret Magnetic Field Data ISEE-3	67 months	P	20,089
Douglas Jones	NASA	Jupiter and Saturn Magnetometer Exp.	1 year	F	30,511
L. Knight/J. Thorne	Department of Energy	Parameters Affecting LSM Performance	1 year	F	209,660
Larry Knight	Lawrence Livermore Lab	Multilayer Resistance to Heat & Shock	1 year	P	49,998
Steven Jones	Department of Energy	Muon Catalyzed Fusion	1 year	F	<u>173,405</u>
		Department Total			483,663
<u>Cancer Research Center</u>					
Roland Robins	Ortho Pharmaceutical	Synthesis of Mercap to Guanosine	open	P	65,000
Roland Robins	National Institutes of Health	Formulation of Chemical Compounds	open	F	4,960

Investigator	Granting Agency	Title	Period	Type	Amount
Roland Robins	U.S. Army	Study of Azole Carboxamide Nucleosides	75 months	F	31,837
Roland Robins	National Institutes of Health	Chemical Compounds for Chemotherapy	open	F	4,800
Roland Robins	Scripps Research Inst.	Chemical Compounds	open	P	7,420
Roland Robins	U.S. Army	Nucleosides as Agent Against RNA	73 months	F	111,429
Roland Robins	U.S. Army	Inhibitors of Parasites	39 months	F	121,146
Roland Robins	National Institutes of Health	Biomedical Support Grant	1 year	F	<u>14,090</u>
			Department Total		360,682
			COLLEGE TOTAL		1,881,459
<u>McKay Institute</u>					
William Quinn	LDS Church	Missionary Research Coordination	1 year	P	35,522
Larry Gale	Department of Education	Skills of Effective Teaching	1 year	F	<u>50,000</u>
			Institute Total		85,522
<u>Thermochemical Institute</u>					
Izatt/Christensen	Natl Science Foundation	Ternary Heat of Mixing	1 year	P	10,686
Edwin Lewis	Department of Interior	Complexation & Ionization at Oxide	1 year	F	49,430
Izatt/Christensen	Gas Processors Assoc.	Acid Gases & Ammonia in Solvents	1 year	P	50,000
Delbert Eatough	So. California Edison	Mohave Plume Study	14 months	P	5,520
Reed Izatt	EPRI	Modeling Corrosion in Steam Generators	1 year	P	53,319
Delbert Eatough	Department of Energy	Molecular Interactions in Coal Liquids	3 years	F	34,320
Delbert Eatough	So. California Edison	Sampling for Volatile Organic Compounds	10 months	P	37,100
Lee Hansen	Potassium Chemical	Determination of Salt Melting Points	2 months	P	600
Izatt/Christensen	Conoco	Measurement of Binary Systems	6 months	P	20,000
Izatt/Christensen	American Chemical So.	Heats of Mixing in Supercritical Reg.	38 months	P	15,000

RESEARCH GRANT/CONTRACT AWARDS
1984 - 1985

Investigator	Granting Agency	Title	Period	Type	Amount
Delbert Eatough	So. California Edison	Development of Sampling Systems	open	P	5,520
Delbert Eatough	So. California Edison	Determination of Aerosol Compounds	6 months	P	36,360
Reed Izatt	EPRI	Thermodynamic Data Modeling Corrosion	2 years	P	33,000
Delbert Eatough	Environmental Protection Agency	Emissions of Fossil Fuel Combustion	3 years	F	20,000
James Christensen	Department of Energy	Separation of Cations by Liquid Membr.	3 years	F	96,221
James Christensen	Exxon	Selexol Heats of Mixing	open	P	18,660
Douglas Bennion	ONR	Lithium-Thionyl Chloride Flow Battery	6 years	F	25,000
Delbert Eatough	So. California Edison	Oil Fly Ash Samples	7 months	P	<u>35,109</u>
		Institute Total			545,845
		TOTALS			6,389,695
** Additional Research Funds received which are not kept in 5- accounts and for which limited information is available:					
Biology & Agriculture					\$ 353,994
Engineering and Technology					1,581,300
Family Home & Social Sciences					165,401
Fine Arts & Communications					17,500
Humanities					14,500
Physical & Mathematical Sciences					89,422
Religious Instruction					11,416
		GRAND TOTAL			8,623,228

SOURCE BREAKDOWN

GRANTS & CONTRACTS

SOURCE BREAKDOWN FOR RESEARCH
GRANTS & CONTRACTS
1984 - 1985

Type of Organization	Dollars Awarded	# of Awards	Type of Organization	Dollars Awarded	# of Awards
<u>PRIVATE</u>			<u>PRIVATE (Continued)</u>		
Aerovironment	\$ 79,690	1	Merck, Sharp and Dohme	\$ 8,950	1
ALCOA	\$ 67,271	1	Morton Thiokol	\$ 10,000	1
Alumni Association	\$ 15,000	3	Ortho Pharmaceutical	\$ 65,000	1
American Chemical Society	\$ 35,500	3	Pioneer Potato Company	\$ 1,000	1
Angus Chemical	\$ 21,021	1	Provo Rotary	\$ 1,088	4
AMMA Research Foundation	\$ 29,981	1	Remington Stevens	\$ 4,930	1
Babcock & Wilcox	\$ 15,000	1	Rockwell International	\$ 2,100	1
Boeing	\$ 69,840	4	Rogers Brothers Seed Company	\$ 500	1
Computer Systems Architects	\$ 46,382	1	Sandia Labs	\$ 71,989	3
Conoco	\$ 20,000	1	Schering Corporation	\$ 6,566	1
Controlled Data Corporation	\$ 60,000	1	Scripps Research	\$ 7,420	1
Coordinating Research Council	\$ 45,387	1	Southern California Edison	\$ 397,707	8
Donor and Matching Funds	\$ 60,000	2	Springville City	\$ 11,025	1
EPRI	\$ 136,319	4	State of Utah	\$ 23,178	3
Exxon	\$ 18,660	1	Uniroyal	\$ 30,511	1
Garrett Turbine	\$ 41,121	3	Utah Power & Light	\$ 42,160	3
Gas Processors Association	\$ 50,000	1	Utah Turkey Marketing Board	\$ 5,500	1
Gas Research Institute	\$ 120,000	1			
General Electric	\$ 35,508	1	TOTALS	\$2,270,590	78
Hart Scientific	\$ 175,310	1			
Hess Pumice Products	\$ 2,000	1			
Hughes Aircraft	\$ 47,260	2			
IBM	\$ 20,400	1			
Jet Propulsion Lab	\$ 20,089	1			
Kalium Chemical	\$ 600	1			
Kennametal Inc.	\$ 90,570	1			
Lawrence Livermore Lab	\$ 49,998	1			
LDS Church	\$ 208,059	4			
				\$*2,238,533	

*Additional funds received which are not kept in 5- accounts and for which limited information is available.

SOURCE BREAKDOWN FOR RESEARCH
GRANTS & CONTRACTS
1984 - 1985

Type of Organization	Dollars Awarded	# of Awards	Type of Organization	Dollars Awarded	# of Awards
<u>FEDERAL</u>					
Army	\$ 591,943	6			
Army Corp of Engineers	\$ 25,000	1			
Bureau of Reclamation	\$ 10,830	3			
Department of Defense	\$ 436,545	2			
Department of Education	\$ 219,932	4			
Department of Energy	\$ 1,986,273	16			
Department of Health & Human Services	\$ 157,969	1			
Department of Interior	\$ 49,430	1			
Department of Transportation	\$ 16,136	2			
Environmental Protection Agency	\$ 20,000	1			
Federal Bureau of Investigation	\$ 12,017	2			
Forest Service	\$ 37,938	2			
NASA	\$ 95,451	2			
Naval Electronics Systems	\$ 54,998	1			
Naval Weapons Center	\$ 9,481	1			
Navy	\$ 260,334	1			
National Institute of Health	\$ 85,102	6			
National Park Service	\$ 9,320	1			
National Science Foundation	\$ 230,182	6			
Office of Naval Research	\$ 25,000	1			
U.S. Geological Survey	\$ 3,440	1			
TOTALS				\$ 4,337,321	61

GRANT/CONTRACT AWARDS

BY AMOUNT

GRANT/CONTRACT AWARDS BY AMOUNT

DOLLAR AMOUNTS	NUMBER OF AWARDS	DOLLARS AWARDED	% OF TOTAL AWARDS
0 to \$10,000	41	\$ 206,887	31%
\$10,000 to \$25,000	30	\$ 530,523	22%
\$25,000 to \$50,000	33	\$1,182,925	24%
\$50,000 to \$100,000	17	\$1,222,832	12%
\$100,000 to \$200,000	9	\$1,172,575	7%
\$200,000 to \$500,000	7	\$2,012,493	4%
TOTALS	139	\$6,389,695	100%

*Additional funds received which are not kept in 5-accounts and for which limited information is available.

TOTAL: \$8,623,228

SPONSORED RESEARCH ACTIVITY

BY COLLEGE & DEPARTMENT

SPONSORED RESEARCH PROPOSALS

During the 1984-1985 year, 176 proposals were submitted to various agencies for funding. This was a decrease of 45 over the previous year.

Of the 176 proposals submitted, 60 were funded, 37 were rejected, and 79 are pending.

During part of the reporting year, there were centers and institutes operating independently of the colleges. This data may not accurately reflect the total proposal activity of those centers and institutes. This situation was corrected during the current year, so that all research activity at this time is directly under college administration.

SUMMARY OF SPONSORED RESEARCH PROPOSALS
1984-1985

College/Department/ Institute	No. of Faculty in Department	No. of Faculty Submitting	No. of Proposals Submitted	No. of Proposals Pending	No. of Awards	Dollars Awarded
<u>BIOLOGY & AGRICULTURE</u>						
Agriculture Economics	5	2	2	1	1	\$ 12,000
Agonomy & Horticulture	8	2	2	0	0	0
Animal Science	11	0	0	0	0	0
Botany & Range Science	15	7	12	5	4	54,820
Food Science & Nutrition	9	1	3	2	2	106,581
Microbiology	12	1	1	0	3	23,244
Zoology	26	8	9	4	4	67,877
TOTALS	86	21	29	12	14	\$ 264,522
<u>EDUCATION</u>						
Curriculum/Instructional	13	1	2	0	2	\$ 27,961
Educational Administration	8	0	0	0	1	34,977
Educational Psychology	19	2	2	1	1	107,735
Elementary Education	30	1	1	1	0	0
Secondary Education	13	0	0	0	0	0
TOTALS	83	4	4	2	4	\$ 170,673
<u>ENGINEERING & TECHNOLOGY</u>						
Chemical Engineering	12	9	25	15	13	\$1,424,740
Civil Engineering	16	11	25	10	21	653,568
Electrical Engineering	15	3	5	1	4	97,015
Industrial Education	14	1	1	1	0	\$ 0
Mechanical Engineering	12	4	9	2	14	333,233
Technology	17	4	5	3	2	110,470
CAM Laboratory	1	1	1	0	0	0
TOTALS	87	33	71	32	54	\$2,619,026

College/Department/ Institute	NO. OF Faculty in Department	NO. OF Faculty Submitting	NO. OF Proposals Submitted	NO. OF Proposals Pending	NO. OF Awards	DOLLARS Awarded
<u>FAMILY, HOME & SOCIAL SCIENCES</u>						
Anthropology	8	0	0	0	0	\$ 0
Clothing & Textiles	10	0	0	0	0	0
Economics	11	0	0	0	1	29,197
Family & Demographic Inst.	1	0	0	0	1	300
Family Sciences	27	1	1	0	1	157,969
Geography	7	0	0	0	1	2,000
History	25	0	0	0	0	0
Home Economics Education	5	0	0	0	0	0
International & Area Studies	1	0	0	0	0	0
Institute of Church History	7	0	0	0	0	0
Political Science	17	0	0	0	0	0
Psychology	22	0	0	0	2	39,312
Social Work	10	0	0	0	0	0
Sociology	16	1	1	1	0	0
TOTALS	167	2	2	1	6	\$ 228,778
<u>FINE ARTS & COMMUNICATIONS</u>						
Art	20	0	0	0	1	\$ 5,000
Communications	26	0	0	0	0	0
Design	11	0	0	0	0	0
Music	39	0	0	0	0	0
Theatre & Cinematic Arts	16	0	0	0	0	0
TOTALS	112	0	0	0	1	\$ 5,000
<u>HUMANITIES</u>						
Asian & Near East Languages	14	1	1	0	1	\$ 95,431
Calico	1	1	1	1	2	454,869
English	55	1	1	1	1	5,000
French & Italian	12	0	0	0	0	0
Germanic & Slavic Languages	13	0	0	0	0	0
Humanities Classics	17	0	0	0	0	0
Humanities Research Ctr.		1	1	0	1	28,340
Library/Information Science	5	0	0	0	0	0

College/department/ Institute	NO. OF Faculty in Department	NO. OF Faculty Submitting	NO. OF Proposals Submitted	NO. OF Proposals Pending	NO. OF Awards	Amount Awarded
<u>HUMANITIES (Continued)</u>						
Linguistics	13	0	0	0	0	0
Philosophy	9	0	0	0	0	0
Spanish & Portuguese	21	0	0	0	0	0
TOTALS	160	4	4	2	5	\$ 583,640
<u>LAW SCHOOL</u>						
	24	2	3	1	1	\$ 4,930
TOTALS	24	2	3	1	1	\$ 4,930
<u>NURSING</u>						
	34	1	1	1	1	\$ 300
TOTALS	34	1	1	1	1	\$ 300
<u>PHYSICAL & MATH SCIENCES</u>						
Cancer Research Center	1	1	2	0	8	\$ 360,682
Chemistry	29	17	21	10	1	961,892
Computer Science	18	2	2	1	3	71,782
Geology	12	2	3	1	1	3,440
Math	37	0	0	0	0	0
Physics & Astronomy	29	6	10	3	5	483,663
Statistics	13	1	1	0	0	0
TOTALS	139	29	39	15	18	\$1,881,459
<u>PHYSICAL EDUCATION</u>						
Health Sciences	13	0	0	0	0	\$ 0
Physical Education (Dance)	11	0	0	0	0	0
Physical Education (Sports)	37	1	1	1	0	0
Recreation/Youth Leadership	13	0	0	0	0	0
TOTALS	74	1	1	1	0	\$ 0

College/Department/ Institute	No. of Faculty in Department	No. of Faculty Submitting	No. of Proposals Submitted	No. of Proposals Pending	No. of Awards	Dollars Awarded
<u>RELIGIOUS INSTRUCTION</u>						
Ancient Scriptures	21	0	0	0	0	\$ 0
Church History & Doctrine	24	0	0	0	0	\$ 0
TOTALS	45	0	0	0	0	\$ 0
<u>SCHOOL OF MANAGEMENT</u>						
Institute of Public Mgt. Information Management	9	0	0	0	0	\$ 0
Institute of Business Mgt. Managerial Economics	17	0	0	0	0	\$ 0
Organizational Behavior School of Accountancy	27	0	0	0	0	\$ 0
TOTALS	53	0	0	0	0	\$ 0
<u>INSTITUTES & CENTERS</u>						
McKay Institute	2	2	2	0	2	\$ 85,522
TOTALS	2	2	2	0	2	\$ 85,522
<u>Thermochemical Institute</u>						
TOTALS	1	1	21	12	18	\$ 545,845
TOTALS	1	1	21	12	18	\$ 545,845

PROPOSALS SUBMITTED FOR EXTERNAL FUNDS

Year	New	Renewal	Continuation	Total
1974-75	104	19	47	170
1975-76	132	52	27	211
1976-77	102	27	39	168
1977-78	159	43	38	240
1978-79	147	25	51	223
1979-80	189	30	23	243
1980-81	142	38	32	212
1981-82	173	21	32	226
1982-83	154	19	36	209
1983-84	170	14	37	221
1984-85	146	5	25	176

240 -
220 -
200 -
180 -
160 -
140 -
120 -
100 -
80 -
60 -
40 -
20 -

1985-86
153

1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985

Year Ending
August 31, 1985

EXPENDITURES OF EXTERNAL FUNDS

RESEARCH EXPENDITURES BY CATEGORY
(From Restricted Sponsored Research "5-" Accounts Only)

1984-1985

Wages & Salaries

Administrative Salaries	\$ 156,337
Full-time Faculty Salaries	807,783
Spring Faculty Salaries	258,766
Faculty Overload	204,231
Summer Faculty Salaries	194,564
Part-time Faculty Salaries	44,734
Staff Salaries	78,870
Student Assistant Salaries	327,812
Student Wages	706,789
Temporary Non-student Wages	86,502
Honorariums	1,250

	\$2,867,638
--	-------------

Other

Consultants	\$ 40,828
Salary Benefits	335,804
Building & Equipment Rental	14,361
Computer Services	90,391
Capital Equipment	377,238
Travel & Per Diem	216,849
Supplies	823,147
Telephone	(150)
Publications	9,240
Student Fellowships	10,593
Subcontracts	272,488
Departmental Indirect Costs	12,488
University Indirect Costs	1,363,668

	\$3,566,945
--	-------------

GRAND TOTAL 1984-85	\$6,434,583
---------------------	-------------

Grand Total 1983-84	\$5,354,551
---------------------	-------------

Expenditures of External Funds

by

Department and College

(From Restricted Sponsored Research "5-" Accounts Only)

September 1, 1984 - August 31, 1985

College & Department	Total
<hr/>	
<u>Biology & Agriculture</u>	
Agricultural Economics	\$ 5,496
Agronomy & Horticulture	220
Animal Science	71,896
Benson Institute	96,149
Botany & Range Science	285,186
Food Science & Nutrition	135,643
Microbiology	15,284
Zoology	167,789
	<hr/>
College Total	\$ 777,663
<u>Education</u>	
Educational Administration	\$ 360
Community Education	823
	<hr/>
College Total	\$ 1,183
<u>Engineering & Technology</u>	
Chemical Engineering	\$ 832,131
Civil Engineering	518,942
Electrical Engineering	254,158
Mechanical Engineering	208,154
Technology	60,026
	<hr/>
College Total	\$1,873,411
<u>Family, Home & Social Sciences</u>	
Anthropology	\$ 0
Economics	38
Family & Demographic Institute	300
Family & Local History	0

College & Department	Total
<u>Family, Home & Social Sciences (Continued)</u>	
Family Science	157,812
History	6,315
Home Economics	0
Psychology	15,205
Sociology	5,634
Political Science	10,460
Comprehensive Clinic	11,466
	<hr/>
College Total	\$ 207,230
<u>Fine Arts & Communications</u>	
Design	\$ 0
Theatre	0
	<hr/>
College Total	\$ 0
<u>Humanities</u>	
Asian & Slavic Languages	\$ 24,150
Linguistics	95
Humanities Research Center	632,566
Humanities Classics	120
	<hr/>
College Total	\$ 656,931
<u>Law</u>	
	\$ 52,222
	<hr/>
College Total	\$ 52,222
<u>Nursing</u>	
	\$ 7
	<hr/>
College Totals	\$ 7
<u>Physical Education</u>	
Men's Physical Education	\$ 3,393
	<hr/>
College Totals	\$ 3,393

College & Department	Total
<u>Physical & Math Sciences</u>	
Cancer Research Center	\$ 704,122
Chemistry	578,779
Computer Science	106,554
Geology	75,850
Physics & Astronomy	297,179
College Totals	\$1,762,484
 <u>Religious Education</u>	
	\$ 64,802
College Total	\$ 64,802
 <u>School of Management</u>	
Business Management	\$ 390
College Total	\$ 390
 <u>Other</u>	
ASBYU Student Research	\$ 19,227
Other	3,912
Other Total	\$ 23,139
 <u>Institutes</u>	
McKay Institute	\$ 200,374
Thermochemical Institute	811,354
Institute Total	\$ 1,011,728
 GRAND TOTAL 1984-1985	 \$6,434,583 =====
 Totals for 1983 - 1984	 \$5,354,551 =====