

**Annual
Report of
Sponsored Program Activity
Fiscal Year 2004**

**Division of
Research**

**University
of
North Dakota**

EXECUTIVE SUMMARY

I am pleased to present the Division of Research Annual Report of Sponsored Program Activities for fiscal year 2004 (FY04). At the end of FY04, UND's research portfolio included \$299.6 million in total committed accounts, which represents \$243.5 million of current sponsored program accounts received for ongoing multi-year awards plus obligations not yet received for ongoing multi-year awards from external agencies that fund research.

FY04 was an exciting year indeed for sponsored program awards and expenditures at the University of North Dakota. Awards for the year, which have increased significantly for seven consecutive years, reached a record high of over \$83 million. Likewise, annual expenditures, which increased significantly for the fifth consecutive year, reached a record high of \$82.6 million. The increase in sponsored program awards and expenditures is dramatic; since FY01 awards have increased 84 percent and expenditures have increased 77 percent. Notably, 71 percent of awards and expenditures stem from federal sources, which represent new money to the State of North Dakota. In fact, UND has increased its ranking from fifth to third of the ten research universities in our five state region, behind only the University of Minnesota and Montana State University, in research expenditures stemming from federal sources, according to the most current data (FY02) maintained by the National Science Foundation.

The report that follows is provided in four parts beginning with a summary of the economic impact of UND sponsored program activity (Part I) followed by summaries of expenditure (Part II) and award (Part III) analyses. Part IV is a report of the newly reorganized North Dakota Experimental Program to Stimulate Competitive Research (ND EPSCoR).

The extent to which UND research serves as a source of economic development is summarized in Table 1-1. UND sponsored program activities in FY04 generated over \$166 million in economic output and 1,630 jobs across Grand Forks County, the State of North Dakota, and the five-state North Central Region. In addition, UND sponsored program expenditures generated more than \$4 million in state and local tax revenues, and more than \$15 million in federal tax revenues. Table 1-1 shows that the most significant impact of UND research on economic development is felt by an overwhelming extent within the State of North Dakota. For example, \$135.3 million of the \$166.7 million of economic output, and 1,430 of 1,630 jobs, are realized within the state. The full report demonstrating the economic impact of UND sponsored program activity in FY04 is found in Part I.

Table 1-1: UND Research Impact on Economic Output, Employment, and Tax Revenues

	\$ Output (Y2004 Dollars)	Number of Jobs	State-Local Tax Revenue	Federal Tax Revenue
GF County	\$123,861,020	1,262	\$2,346,152	\$ 8,489,354
State	11,490,229	168	301,282	1,892,988
5 State Region	31,386,002	200	2,127,639	4,744,284
Total	\$166,737,251	1,630	\$4,775,073	\$15,126,626

A summary of sponsored program activity for FY04 is shown in Table 1-2. Sponsored program awards amounted to \$83.03 million, an increase of 15.2 percent compared to FY03 and an increase of 83.6 percent over the three-year period from FY01-04. More than \$69.7 million of sponsored program awards represents grant and contract awards. Over 70.5 percent of the grant and contract awards stem from federal dollars, which represent new money to the State of North Dakota. The \$69.7 million in grant and contract awards

represents an increase of 14 percent compared to FY03 and an increase of 54 percent over the three-year period from FY01-04.

The majority of research funding at UND focuses around three clusters; 1) energy and environmental research, with the Energy and Environmental Research Center leading other units in this cluster with \$21.3 million in awards; 2) life and medical sciences, with the School of Medicine and Health Sciences leading other cluster units with \$17.2 million in awards; and 3) aerospace and aviation research, with the John D. Odegard School of Aerospace Sciences leading other units in this cluster with \$8.7 million in awards. Complete details of FY04 Sponsored Awards for all of the university's eight colleges and schools are provided in Part III.

Sponsored program expenditures in FY04 amounted to \$82.6 million, an increase of 22 percent compared to FY03 and a 76.9 percent growth over the past three years. Grants and contracts expenditures for FY04 amounted to \$69.51 million, an increase of 21.3 percent compared to FY03 and a 75.6 percent increase over the past three years. See Part II for further details regarding Sponsored Program Expenditures.

Table 1-2. Summary of Sponsored Programs Awards and Expenditures: FY 2003-2004

	Awards (Millions)	Awards Breakdown	Expenditures (Millions)	Expenditures Breakdown
Grants and Contracts	\$69,662,105		\$69,506,545	
Instruction		\$ 4,612,752		\$ 4,274,332
Public Service		18,640,325		15,354,010
Research		45,667,386		44,799,168
Other		741,642		5,079,035
Unrestricted Awards	\$ 4,270,586		\$ 3,987,384	
Faculty Research Seed Money		\$ 731,868		\$ 691,590
Graduate Research Assistant Tuition Waivers		1,058,969		1,058,969
Miscellaneous Research Expenses		53,704		53,704
Office of Research and Program Development		136,655		84,294
Research Funds Provided by Deans/Departments and the Alumi Association ¹		1, 588,049		1, 588,049
Senate Scholarly Activities Committee		131,349		125,440
Vice President for Academic Affairs Start-Up		126,500		106,538
Vice President for Research Matching		387,561		222,869
Vice President for Research Discretionary ²		55,931		55,931
Student Financial Aid	\$ 9,093,366		\$ 9,093,366	
SPONSORED PROGRAMS TOTALS	\$83,026,057		\$82,587,295	

¹ Based on information provided by deans, department chairs, and the Alumni Association.

² Additional awards made from this fund are included in the totals for the Senate Scholarly Activities Committee (supplemental award of \$13,860 for travel awards) and Miscellaneous Research Expenses (Proposal Writing Workshop, \$7,000).

The objective of the ND EPSCoR program is to build the proper infrastructure to sustain nationally competitive research institutions in the State of North Dakota, and to enhance and support the technology transfer and commercialization of the intellectual property stemming from the state's research institutions. Part IV discusses the organizational changes to ND EPSCoR that came about as a function of dramatic growth in EPSCoR funding and the need to better support the research aims of the state's two research universities. In FY04, EPSCoR awards on the UND campus amounted to over \$1.2 million. Details of these awards can be found in Part IV.

UND is well on its way in achieving the research goals set forth in President Kupchella's strategic plan. The data presented here are strong testimony to the skill and expertise of the university's faculty and staff, and a reflection of the university's commitment to provide proper infrastructure and support for research, scholarship, and creative activity. In addition, Technology Transfer and Commercialization was established in late FY04 to aggressively pursue UND intellectual property rights and to license rights to business partners or start-up companies. The continuing success in extramural funding is a harbinger of continuing discoveries and significant engagement between the university with entities within the state, the upper Midwest region, the nation, and the world for meaningful public service.

Peter Alfonso, Ph.D.
Vice President for Research

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	ix
PART I: THE ECONOMIC IMPACT OF RESEARCH AT THE UNIVERSITY OF NORTH DAKOTA: FISCAL YEAR 2004	1
PART II: ANNUAL REPORT OF SPONSORED PROGRAM EXPENDITURES: FISCAL YEAR 2004	6
PART III: ANNUAL REPORT OF SPONSORED PROGRAM AWARDS: FISCAL YEAR 2004	9
INTRODUCTION	10
SECTION I. GRANTS AND CONTRACTS ACTIVITY	11
SECTION II. UNRESTRICTED FUNDS ACTIVITY	32
A. Institutional Research Fund (IRF)	32
1. ORPD Research Fund	32
2. Senate Scholarly Activities Committee	32
3. Graduate School Stipends	34
4. Indirect Cost Monies Sharing Program	34
B. State-Appropriated Funds for Research	35
C. Faculty Research Seed Money Fund	35
D. Patenting/Licensing	37
E. Grantsmanship Fund	37
F. North Dakota EPSCoR Travel Fund	39
G. Vice President for Academic Affairs Awards	41
H. Vice President for Research Awards	41
I. Unrestricted Awards at the University of North Dakota by Type of Activity and	

Unit	43
J. Research Funds Provided by Departments, Colleges, and the Alumni Association	44
SECTION III. AWARDS FROM THE ORPD RESEARCH FUND	45
A. Lecture Series and Conferences	47
B. Matching Awards	47
C. Publication Awards	47
D. Research and Program Development	47
E. Research Initiation and Interim Funding of Grants	48
F. Start-Up Funds for New Faculty	48
G. Travel (Other)	49
H. Travel to Present Research Papers	49
PART IV. NORTH DAKOTA EPSCOR FUNDING	51
A. Reorganization of ND EPSCoR	52
B. National Science Foundation Program Managers	54
C. New Initiatives	54
1. Infrastructure Improvement Programs	56
2. Science Outreach And Recruitment (SOAR)	57
3. NASA EPSCoR Grants	58
4. EPA EPSCoR Grants	58
5. NIH Biomedical Research Infrastructure Network (BRIN) Grants	59
6. North Dakota EPSCoR Awards by University Unit	59
APPENDICES	60
APPENDIX A	61
APPENDIX B	62
APPENDIX C	63
APPENDIX D	101

LIST OF TABLES

Table 1-1. UND Research Impact on Economic Output, Employment, and Tax Revenues	ii
Table 1-2. Summary of Sponsored Programs Awards and Expenditures: FY 2003-2004	iii
Table 2-1. Sponsored Programs Expenditures: FY 2004	7
Table 2-2. Sponsored Programs Expenditures: FY 1994-2004	8
Table 3-1. Grants and Contracts Received at UND: FY 1994-FY 2004	11
Table 3-2. Grants and Contracts Received at UND by Source: FY 2004	13
Table 3-3. Grants and Contracts Received at UND by Administrative Unit: FY 2002-FY 2004	14
Table 3-4. Grants and Contracts Received by the College of Arts and Sciences: FY 2002-FY 2004 . .	18
Table 3-5. Grants and Contracts Received by the College of Business and Public Administration: FY 2002-FY 2004	20
Table 3-6. Grants and Contracts Received by the College of Education and Human Development: FY 2002-FY 2004	21
Table 3-7. Grants and Contracts Received by the John D. Odegard School of Aerospace Sciences: FY 2002-FY 2004	22
Table 3-8. Grants and Contracts Received by the College of Nursing: FY 2002-FY 2004	23
Table 3-9. Grants and Contracts Received by the School of Engineering and Mines: FY 2002- FY 2004	23
Table 3-10. Grants and Contracts Received by the School of Law: FY 2002-FY 2004	24
Table 3-11. Grants and Contracts Received by the School of Medicine and Health Sciences: FY 2002-FY 2004	25
Table 3-12. Multidisciplinary Grants and Contracts Received at UND: FY 2002-FY 2004	27
Table 3-13. Grants and Contracts Received at UND by Unit and Type of Activity: FY 2004	29
Table 3-14. Grants and Contracts Received at UND by Type of Activity: FY 1982-FY 2004	31
Table 3-15. Awards Made by the Senate Scholarly Activities Committee by University Unit: FY 2004	32
Table 3-16. Awards Made by the Senate Scholarly Activities Committee by Type of Award: FY 2004	33
Table 3-17. IRF Allocations Generated in FY 2003 and Awarded in FY 2004	34
Table 3-18. State-Appropriated Funds for Research: FY 2004	35
Table 3-19. Faculty Research Seed Money Awards: FY 2004	36
Table 3-20. Awards Made by the Faculty Research Seed Money Council by University Unit: FY 2004	37
Table 3-21. Grant Writing Mentorship Program Participants: FY 2004	38

Table 3-22. Awards Made to Grantsmanship Workshop Participants After Submission of a Proposal To An External Agency: FY 2004	38
Table 3-23. Grantsmanship Workshop Awards by University Unit: FY 2004	39
Table 3-24. North Dakota EPSCoR Travel Awards: FY 2004	39
Table 3-25. North Dakota EPSCoR Travel Awards by University Unit: FY 2004	40
Table 3-26. Start-Up Awards Made by the Vice President for Academic Affairs by University Unit: FY 2004	41
Table 3-27. Matching Awards Made by the Vice President for Research by University Unit: FY 2004	41
Table 3-28. Discretionary Awards Made by the Vice President for Research by University Unit: FY 2004	42
Table 3-29. Unrestricted Awards by Type of Activity: FY 2004	43
Table 3-30. Unrestricted Awards by University Unit: FY 2004	44
Table 3-31. Awards from the ORPD Research Fund: FY 1994-FY 2004	45
Table 3-32. Awards from the ORPD Research Fund by University Unit: FY 2002-FY 2004	45
Table 3-33. Awards from the ORPD Research Fund by Activity: FY 2001-FY 2004	46
Table 4-1. North Dakota EPSCoR New Faculty Startup Awards: FY 2004	56
Table 4-2. North Dakota EPSCoR Doctoral Dissertation Awards: FY 2004	56
Table 4-3. North Dakota EPSCoR IIP SEED Awards: FY 2004	57
Table 4-4. North Dakota EPSCoR Graduate Assistantship Award: FY 2004	57
Table 4-5. North Dakota EPSCoR Permanent Equipment Acquisition from Strategic Planning Funds: FY 2004	57
Table 4-6. North Dakota EPSCoR AURA Program Awards: FY 2004	57
Table 4-7. North Dakota EPSCoR Science Bound Awards: FY 2004	58
Table 4-8. North Dakota EPSCoR FLARE Awards: FY 2004	58
Table 4-9. North Dakota NASA EPSCoR Awards: FY 2004	58
Table 4-10. North Dakota EPA EPSCoR Seed Grant Award: FY 2004	58
Table 4-11. North Dakota NIH Biomedical Research Infrastructure Network (BRIN) Awards: FY 2004	59
Table 4-12. North Dakota EPSCoR Awards by University Unit: FY 2004	59

LIST OF FIGURES

Figure 2-1. NSF Survey of Science and Engineering Research Expenditures	8
Figure 3-1. Number of Proposals Submitted and Funded: FY 1994-FY 2004	12
Figure 3-2. Dollar Value of Grants and Contracts: FY 1994-FY 2004	12
Figure 3-3. Sources of Grants and Contracts Funding: FY 2004	13
Figure 3-4. Part 1--Administrative Units Receiving \$1 Million or More: FY 2002-2004	16
Figure 3-4. Part 2--Administrative Units Receiving Under \$1 Million: FY 2002-2004	17
Figure 3-5. Grants and Contracts Received by the College of Arts and Sciences: FY 2002-2004	19
Figure 3-6. Grants and Contracts Received by the College of Business and Public Administration: FY 2002-2004	20
Figure 3-7. Grants and Contracts Received by the College of Education and Human Development: FY 2002-2004	21
Figure 3-8. Grants and Contracts Received by the John D. Odegard School of Aerospace Sciences: FY 2002-2004	22
Figure 3-9. Grants and Contracts Received by the College of Nursing: FY 2002-FY 2004	23
Figure 3-10. Grants and Contracts Received by the School of Engineering and Mines: FY 2002-2004	23
Figure 3-11. Grants and Contracts Received by the School of Law: FY 2002-2004	24
Figure 3-12. Grants and Contracts Received by the School of Medicine and Health Sciences: FY 2002-2004	26
Figure 3-13. Multidisciplinary Grants and Contracts: FY 2002-2004	27
Figure 3-14. Grants and Contracts Received at UND by Type of Activity: FY 2004	30
Figure 3-15. Awards Made by the Senate Scholarly Activities Committee by University Unit: FY 2004	33
Figure 3-16. Awards Made by the Senate Scholarly Activities Committee by Type of Award: FY 2004	33
Figure 3-17. Awards Made by the Faculty Research Seed Money Council by University Unit: FY 2004	37
Figure 3-18. Grantsmanship Workshop Awards by University Unit: FY 2004	39
Figure 3-19. North Dakota EPSCoR Travel Awards by University Unit: FY 2004	40
Figure 3-20. Start-Up Awards Made by the Vice President for Academic Affairs by University Unit: FY 2004	41

Figure 3-21. Matching Funds Awards Made by the Vice President for Research by University Unit:	
FY 2004	42
Figure 3-22. Discretionary Awards Made by the Vice President for Research by University Unit:	
FY 2004	42
Figure 3-23. Unrestricted Awards at UND by Type of Activity: FY 2004	43
Figure 3-24. Unrestricted Awards at UND by University Unit: FY 2004	44
Figure 3-25. Awards from the ORPD Research Fund by University Unit: FY 2004	46
Figure 3-26. Awards from the ORPD Research Fund by Type of Activity: FY 2004	46
Figure 4-1. North Dakota EPSCoR Organization	53
Figure 4-2. ND EPSCoR Infrastructure Improvement Program	56
Figure 4-3. North Dakota EPSCoR Awards by University Unit: FY 2004	59

PART I

The Economic Impact of Research at the University of North Dakota: FY04

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**University
of
North Dakota**

PART II

Annual Report of Sponsored Program Expenditures Fiscal Year 2004

Grants and Contracts Administration

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**SPONSORED PROGRAMS EXPENDITURES
DURING FISCAL YEAR 2004**

The data below represent expenditures from awards to UND and direct resources for research provided by UND and the City of Grand Forks. The record of sponsored program expenditures is a critical measure of the University's success in carrying out its mission of education, intellectual discovery, addressing the needs of society and contributing to economic growth.

Sponsored program expenditures grew to \$82,587,295 in Fiscal Year 04 (see Table 2-1), and the growth rate in the last two years was 22 percent (see Table 2-2 and Figure 2-1). Fiscal Year 03 was the first year that expenditures on Unrestricted Awards were tracked. This growth represents significant effort by the University's faculty and staff who are engaged in scholarly activities.

Research Expenditures for the year are reported to the National Science Foundation (NSF). The NSF Survey of Research and Development Expenditures represents a summary of expenditures in support of research. Shown in Figure 2-1 are: 1) expenditures from competitive federal sources, and 2) "total" expenditures, which is the sum of federal expenditures plus sponsored research expenditures from state and local government, industry, and non-profit organizations. Also included in the NSF Survey of Research and Development Expenditures are institutional funds in support of research, cost sharing on certain grants, tuition and fee waivers on student research appointments, and unrecovered indirect costs.

Table 2-1. Sponsored Programs Expenditures: FY 2004

	Expenditures	Expenditures Breakdown
Grants and Contracts	\$69,506,545	
Instruction		\$ 4,274,332
Public Service		15,354,010
Research		44,799,168
Other		5,079,035
Unrestricted Awards		
Faculty Research Seed Money	2,399,335	691,590
Graduate Research Assistant Tuition Waivers		1,058,969
Miscellaneous Research Expenses		53,704
Office of Research and Program Development		84,294
Research Funds Provided by Deans/Departments and the Alumni Association		1,588,049
Senate Scholarly Activities Committee		125,440
Vice President for Academic Affairs Start-Up Awards		106,538
Vice President for Research Matching Funds		222,869
Vice President for Research Discretionary Funds ¹		55,931
Student Financial Aid	9,093,366	
TOTAL	\$82,587,295	

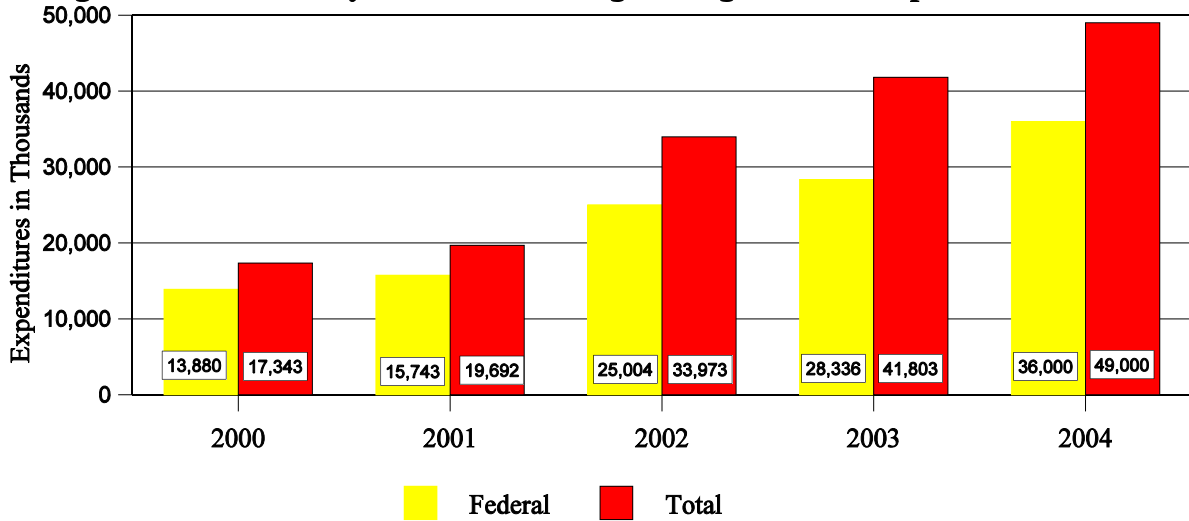
¹Additional awards made from this fund are included in the totals for the Senate Scholarly Activities Committee (supplemental award of \$13,860 for travel awards) and Miscellaneous Research Expenses (Proposal Writing Workshop, \$7,000).

Table 2-2. Sponsored Programs Expenditures: FY 1994-2004

Fiscal Year	Grants and Contracts Expenditures	Student Financial Aid	Unrestricted Awards Expenditures*	Total Expenditures
1994	\$38,818,961	\$5,857,800		\$44,676,761
1995	\$38,264,689	\$5,820,840		\$44,085,529
1996	\$49,594,316	\$5,349,312		\$54,943,628
1997	\$39,531,459	\$5,487,886		\$45,019,345
1998	\$34,461,671	\$6,192,015		\$40,653,686
1999	\$34,435,913	\$6,243,659		\$40,679,572
2000	\$34,587,257	\$6,381,292		\$40,968,549
2001	\$39,645,228	\$7,067,236		\$46,712,464
2002	\$48,313,401	\$8,164,661		\$56,478,062
2003	\$57,284,831	\$8,960,555	\$1,476,437	\$67,721,823
2004	\$69,506,545	\$9,093,366	\$2,399,335	\$82,587,295

*Unrestricted Awards expenditures are included only in FY 2003 and FY 2004.

Figure 2-1: NSF Survey of Science and Engineering Research Expenditures



*FY 2004 is a projection

PART III

**Annual
Report of
Sponsored Program Awards
Fiscal Year 2004**

**Office of Research
and
Program
Development**

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**University
of
North Dakota**

INTRODUCTION

The Annual Report of Sponsored Program Awards has a two-fold purpose: a) to provide information regarding grants and contracts awarded to the University of North Dakota (UND) by external funding entities during Fiscal Year 2004, and b) to provide information regarding grants and contracts awarded from the University's unrestricted funds to support research/creative activities during Fiscal Year 2004. The Report is presented in five sections:

- Section I. Grants and Contracts Activity
- Section II. Unrestricted Funds Activity
- Section III. Awards from the ORPD Research Fund

Four appendices are attached. These appendices provide detailed information concerning proposals submitted (Appendix A) and grants/contracts awarded (Appendix B) during Fiscal Year 2004. Appendix C presents the same information as provided in Appendix B except that the data are listed by the administrative unit that received the award. Appendix D is comprehensive and includes internal and external awards by the name of each principal or co-principal investigator; i.e., awards from the Faculty Research Seed Money Committee, the Senate Scholarly Activities Committee (SSAC), ORPD, and ND-EPSCoR are listed. Since the data in Appendix D are presented by each principal or co-principal investigator, there is duplication in the amount reported in some instances. Thus, the aggregate amount will not sum to the figure listed for total awards presented in Appendices B and C.

Information in this report has been reconciled with data provided by Grants and Contracts Administration. The award data include only those awards for which a written notification of funding was received and an account established by Grants and Contracts Administration on or before June 30, 2004. It is possible that a principal investigator was notified of an award during the last few months of the fiscal year, but the award was not recorded in this report because the account number was not assigned prior to June 30, 2004. Unreported Fiscal Year 2004 awards will appear in the Fiscal Year 2005 Annual Report.

Data in this report pertain to grants and contracts that were processed through the Office of Research and Program Development. Not all externally or internally awarded funds are reported since some forms of assistance are not regularly reported to, or administered through, the Office of Research and Program Development. These categories include:

- federal formula funding for student financial aid,
- grants and contracts awarded to foundations associated with UND,
- grants or contracts awarded directly to faculty or staff but not administered through UND,
- donations of equipment which facilitate research/scholarly activity or teaching at UND.

SECTION I. GRANTS AND CONTRACTS ACTIVITY

Table 3-1 provides summary data concerning grants and contracts* at the University of North Dakota during the past decade. A total of \$69,662,105 was received in Fiscal Year 2004 from a variety of sources. These funds supported instruction, operation/plant maintenance, public service, scholarships/fellowships, and student service projects as well as research. Total award dollars reflected a 13.8 percent increase over the previous fiscal year and a 68 percent increase over the decade. There was a 5.3 percent increase in the number of awards received, with 666 awards in Fiscal Year 2003 and 701 received in Fiscal Year 2004.

Table 3-1. Grants and Contracts Received at UND: FY 1994-FY 2004

Fiscal Year	Proposals Submitted		Awards Received	
	Number	Amount Requested (\$ Millions)	Number	Amount (\$ Millions)
1994	746	87.5	499	41.5
1995	664	73.1	581	45.4 ^a
1996	563	71.0	571	51.1
1997	474	76.2	571	33.7 ^b
1998	499	92.6	579	34.8
1999	604	79.3	555	37.8
2000	673	114.6	650	41.6
2001	654	130.0	598	45.2
2002	672	165.4	673	54.7
2003	743	188.3	666	61.2
2004	857	198.0	701	69.7

^aIncludes \$5,902,269 in research building construction funds.
^bIncludes \$138,000 in research building construction funds.

The number of proposals submitted to external agencies increased from 743 in Fiscal Year 2003 to 857 in Fiscal Year 2004. The dollar value of proposals submitted increased from \$188,284,261 to \$197,980,835. These increases reflect a continued emphasis on the pursuit of external support at UND. Because of intense competition in funding for higher education programs, however, further increases in proposal submission will be necessary to maintain growth in external funding. Additional emphasis will need to be placed on improving proposal quality and strategies. Alternatively, additional faculty could be hired to ensure future significant increases in proposals and awards.

* "Grants and contracts" refers to research, program development, service, fellowships/training and construction projects funded by organizations or persons external to the University (federal, state, and local governments; foundations; industry; etc.).

Figure 3-1. Number of Proposals Submitted and Funded: FY 1994-FY 2004

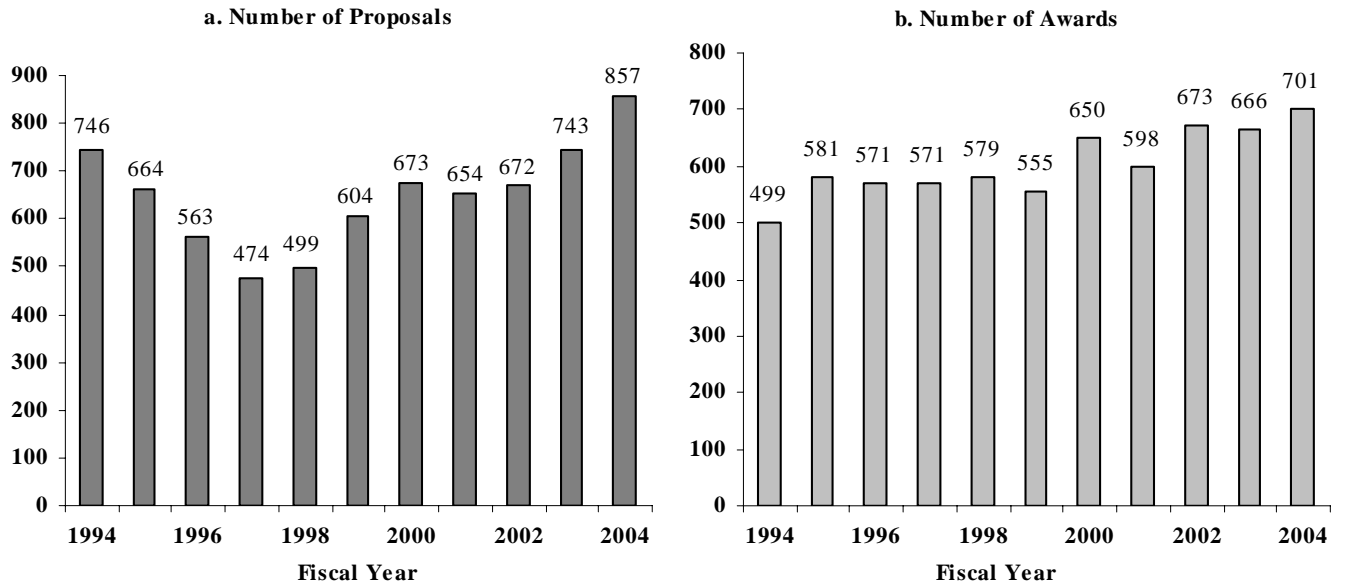
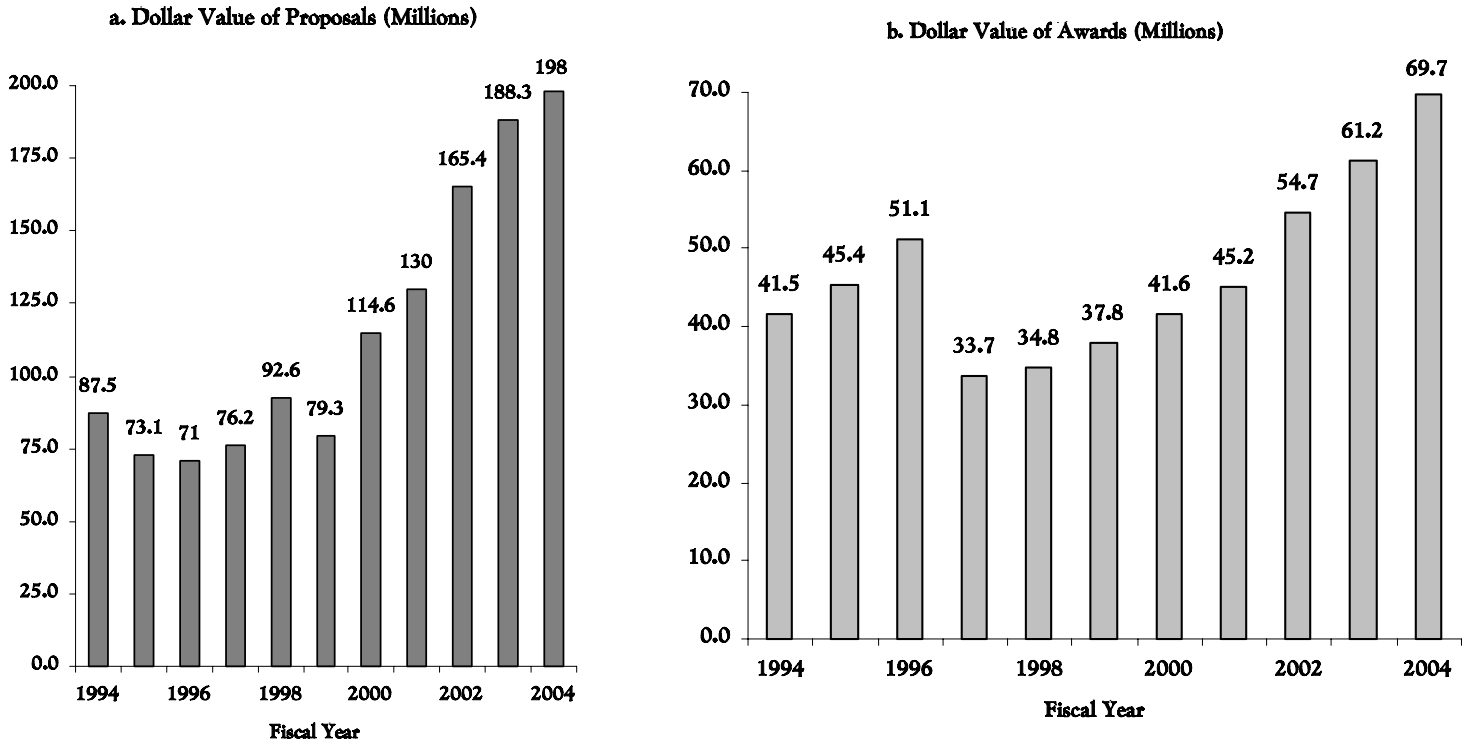


Figure 3-2. Dollar Value of Grants and Contracts: FY 1994-FY 2004



The types of organizations providing grants and contracts in Fiscal Year 2004 are listed in Table 3-2. The federal government, the principal provider of external funding, awarded the University \$49,126,546 (70.5%) in grants and contracts.

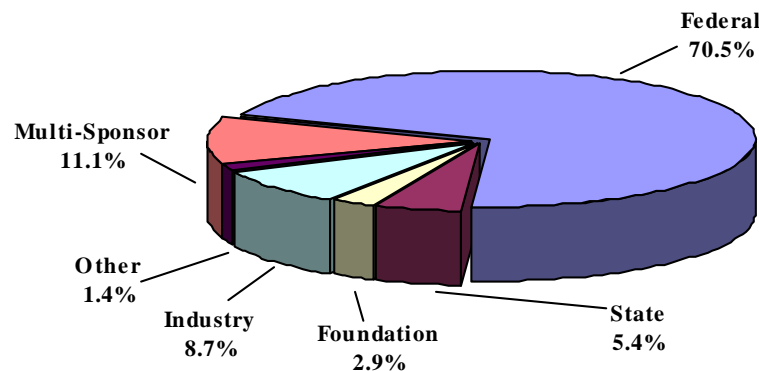
Table 3-2. Grants and Contracts at UND by Source: FY 2004

Source of Funding	Amount	Amount	Percentage
Federal Government		\$49,126,546	70.5%
State Government		3,756,160	5.4%
Foundations		1,975,206	2.9%
Industry		6,079,896	8.7%
Other		987,149	1.4%
Multi-Sponsor		7,737,148	11.1%
Federal and Foundation	\$ 60,000		
Federal and Industry	394,520		
Federal and Other	2,902,419		
Federal and State	4,380,209		
TOTALS		\$69,662,105	100.0%

The "Multi-Sponsor" awards are primarily "pass-through" funds provided by a federal agency to a state, industry or other agency which, in turn, entered into an agreement with the University to pass those federal funds forward.

Figure 3-3 is a graphic depiction of the same information as provided in Table 3-2. Much of the support from industry went to the Energy and Environmental Research Center, but the College of Arts and Sciences and the Schools of Engineering and Mines and Aerospace Sciences also received significant support from this source. Support was received from eight foundations: the Arthritis, Bush, Kauffman, Knight, Myra, Otto Bremer, Robert Wood Johnson, and UND Aerospace Foundations.

Figure 3-3. Sources of Grants and Contracts Funding: FY 2004



The category "other" includes the American Academy of Nursing; American Chemical Society; American Lung Association of Minnesota; Minnesota Corn Research and Promotion Council; North Valley Arts Council; Pembina Trail RC&D; Pratt & Whitney Seattle Aerosciences Center; Rockwell Collins Charitable Corporation; South Dakota Corn Utilization Council; United Blood Services; University Corporation for Atmospheric Research; the American Medical, National Collegiate Athletic, and Northharvest Bean Growers Associations; several North Dakota city, county, and township agencies; public school districts; agencies of other states; and other universities.

Grants and contracts received by the major University administrative units in Fiscal Years 2002-2004 are presented in Table 3-3; Figure 3-4 Part 1, Units Receiving Over \$1 Million; and Figure 3-4 Part 2, Units Receiving Under \$1 Million. The College of Arts and Sciences experienced a 116.9 percent increase, the College of Business and Public Administration a 204.3 percent increase, the School of Aerospace Sciences a 46.9 percent increase, and the School of Law a 1,850 percent increase in funding. The EERC experienced a 32.9 percent increase. EERC's awards comprised approximately 30.6 percent of the total awards; and the School of Medicine and Health Sciences' awards comprised approximately 24.7 percent.

Caution is urged in interpreting these statistics. Although a grant or a contract may be multi-year in operation, some awards are recorded in the first year only. Thus, award data may vary significantly from actual expenditure data.

The data presented by major University administrative units in Table 3-3 is presented by College/Department in Tables 3-4 - 3-12 and Figures 3-5 - 3-13 on the pages 18-27.

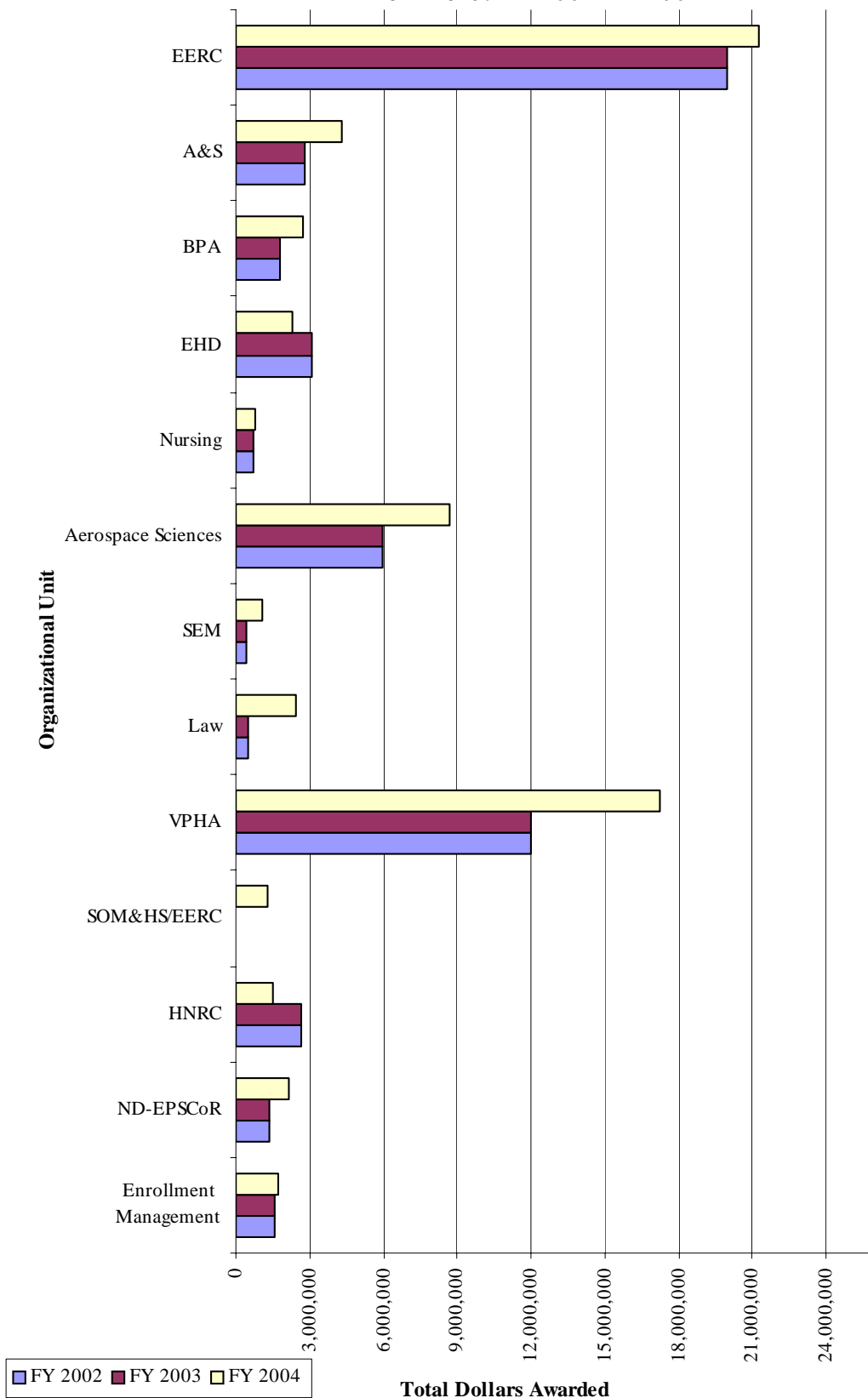
Table 3-3. Grants and Contracts Received at UND by Administrative Unit: FY 2002-2004

Unit	FY 2002	FY 2003	FY 2004
Office of the President			
Athletics	\$ 0	\$ 0	\$ 86,456
Energy and Environmental Research Center	19,996,360	16,019,474	21,284,751
Human Nutrition Research Center ^b	2,653,772	2,250,048	0
Office of the President; Office of the Vice President for Academic Affairs and Provost			
Energy and Environmental Research Center; John D. Odegard School of Aerospace Sciences	86,074	285,000	50,000
Energy and Environmental Research Center; School of Engineering and Mines	84,153	15,000	0
Office of the President; Office of the Vice President for Health Affairs			
Energy and Environmental Research Center; School of Medicine and Health Sciences	141,874	144,911	79,833
Office of the President; Office of the Vice President for Student and Outreach Services			
Athletics; Student Health Services	0	15,000	0
Office of the Vice President for Academic Affairs and Provost			
Chester Fritz Auditorium	0	0	2,430
Chester Fritz Library	38,797	6,458	6,372
College of Arts and Sciences ^a	2,809,274	1,994,935	4,326,503
College of Arts and Sciences; School of Engineering and Mines	0	120,986	66,507
College of Business and Public Administration	1,769,033	900,589	2,740,929
College of Education and Human Development	3,103,349	2,374,568	2,300,895
College of Nursing ^a	723,500	1,443,758	796,480
John D. Odegard School of Aerospace Sciences ^a	5,949,876	5,899,157	8,662,977
North Dakota EPSCoR ^b	1,360,567	972,570	0
Office of Instructional Development	0	0	337,495
Office of the Vice President for Academic Affairs and Provost	5,000	0	0
Office of Research and Program Development; College of Arts and Sciences; School of Engineering and Mines	4,800	0	0
School of Engineering and Mines ^a	451,114	1,069,299	1,055,496
School of Engineering and Mines; College of Arts and Sciences	0	0	84,000
School of Engineering and Mines; College of Arts and Sciences; John D. Odegard School of Aerospace Sciences	0	0	293,254
School of Engineering and Mines; John D. Odegard School of Aerospace Sciences	0	279,071	0
School of Law	522,139	126,133	2,459,611
Office of the Vice President for Academic Affairs and Provost; Office of the President			
John D. Odegard School of Aerospace Sciences; Energy and Environmental Research Center	306,036	0	20,886
School of Engineering and Mines; Energy and Environmental Research Center	115,847	0	0

Continued on next page . . .

Table 3-3. (Continued)			
Office of the Vice President for Academic Affairs and Provost; Office of the Vice President for Health Affairs			
College of Arts and Sciences; School of Medicine and Health Sciences	149,800	0	0
College of Nursing; School of Medicine and Health Sciences	0	20,500	0
Office of the Vice President for Finance and Operations	188,375	167,377	428,764
Office of the Vice President for Health Affairs^a	11,976,086	22,532,698	17,210,355
Office of the Vice President for Health Affairs; Office of the President			
School of Medicine and Health Sciences; Energy and Environmental Research Center	0	1,306,339	1,315,792
Office of the Vice President for Health Affairs; Office of the Vice President for Academic Affairs and Provost			
School of Medicine and Health Sciences; College of Nursing	102,952	0	0
Office of the Vice President for Health Affairs; Office of the Vice President for Student and Outreach Services			
School of Medicine and Health Sciences; Student Services	0	156,545	0
Office of the Vice President for Research			
Human Nutrition Research Center	0	0	1,522,065
ND-EPSCoR ^b	0	0	2,160,253
Office of the Vice President for Research; Office of the Vice President for Academic Affairs and Provost			
Human Nutrition Research Center; College of Arts and Sciences	0	0	500,000
Office of the Vice President for Student and Outreach Services			
Division of Enrollment Management	1,598,362	1,697,645	1,705,544
Division of Outreach	34,758	952,698	92,500
Division of Student Services	497,87	424,983	71,957
TOTALS	\$54,669,775	\$61,175,742	\$69,662,105
^a Additional funding for these colleges is included in the North Dakota EPSCoR total listed below.			
^b The Human Nutrition Research Center and North Dakota EPSCoR Program moved to the Vice President for Research in FY 2004.			

Figure 3-4. Part 1--Administrative Units Receiving \$1 Million or More: FY 2002-FY 2004



**Figure 3-4. Part 2--Administrative Units Receiving Under \$1 Million:
FY 2002-FY 2004**

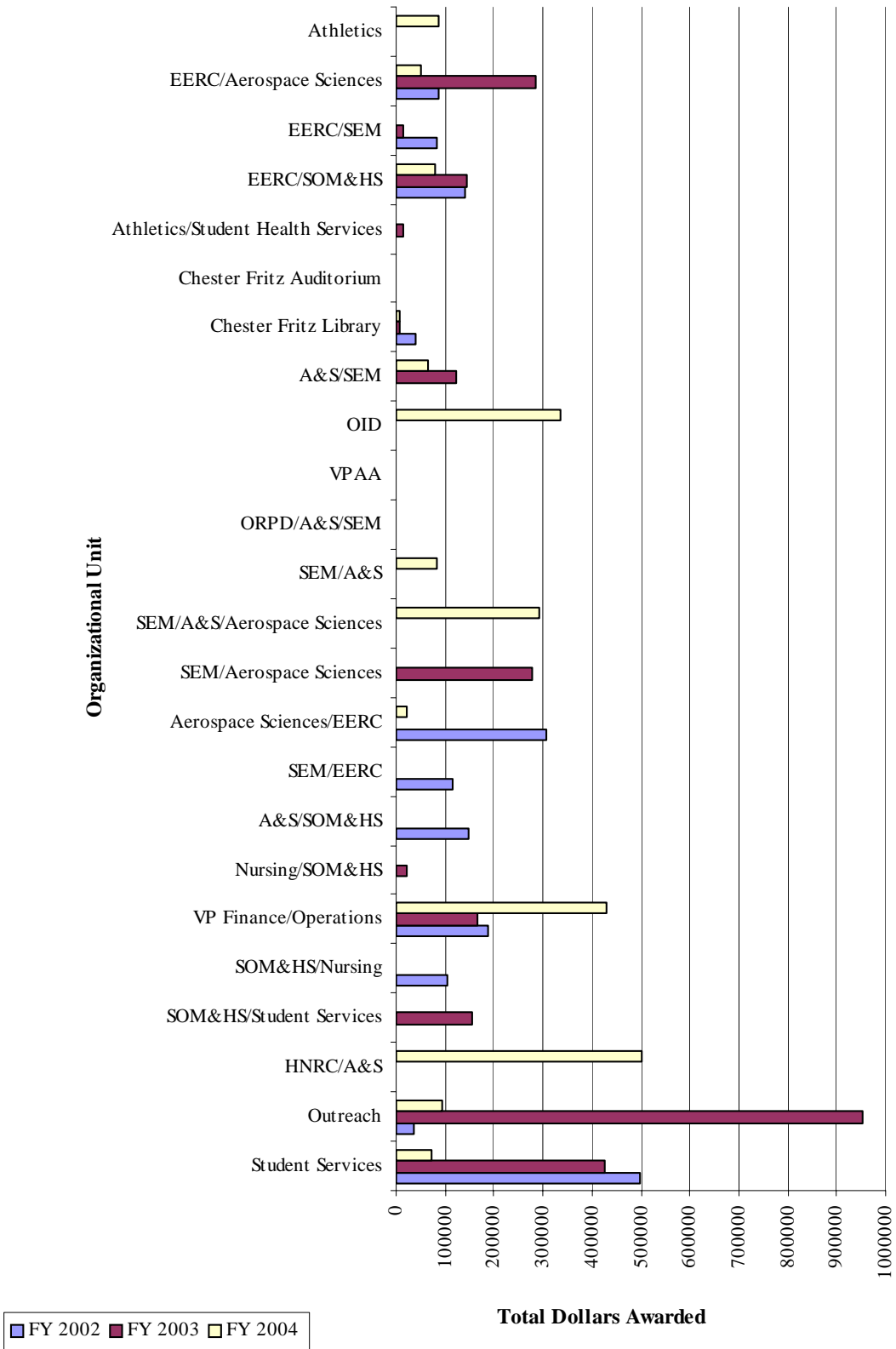
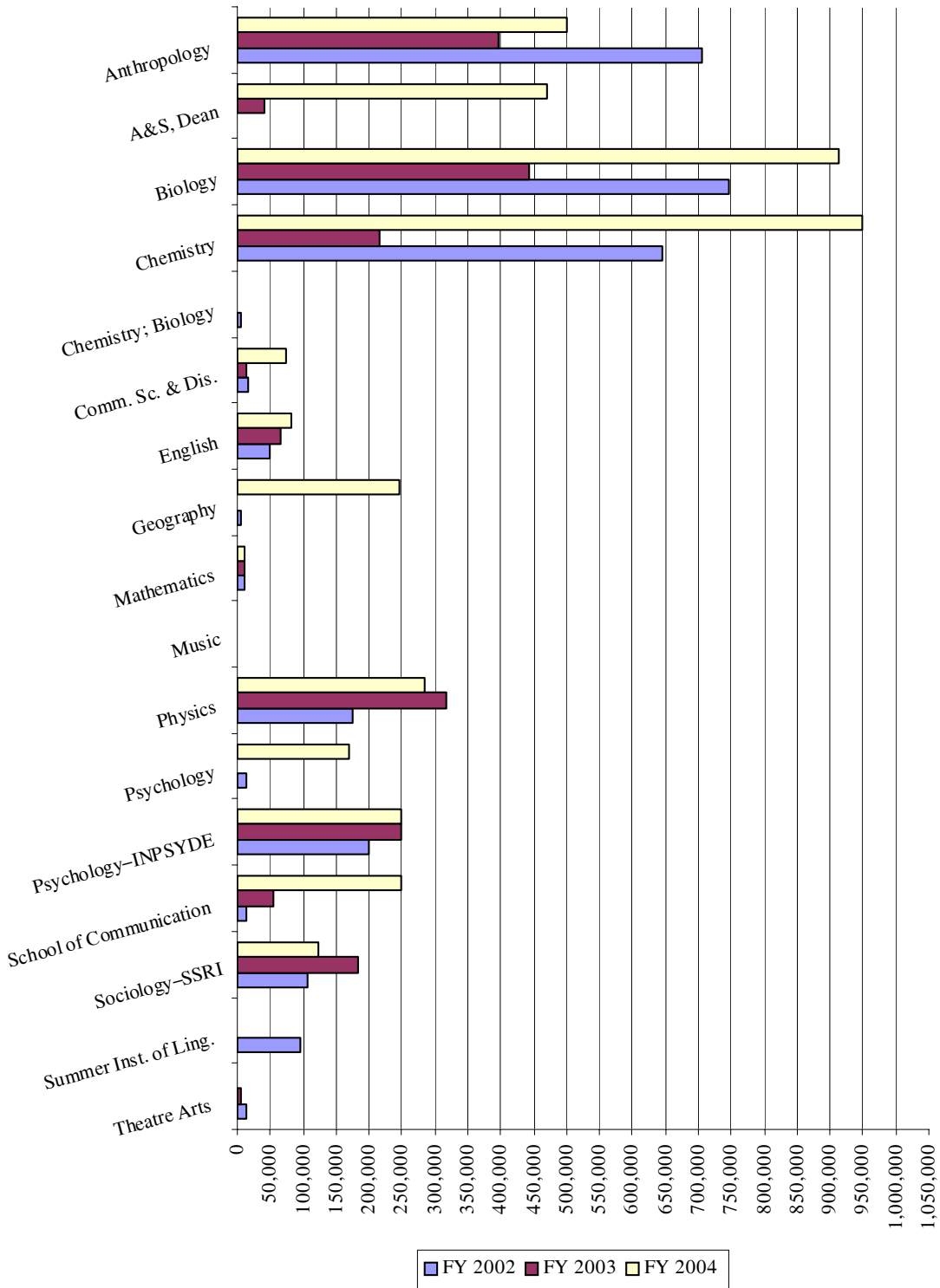


Table 3-4. Grants and Contracts Received by the College of Arts and Sciences: FY 2002-FY 2004

Department	FY2002	FY 2003	FY 2004
Anthropology	\$ 705,658	\$ 397,623	\$ 500,835
Art	0	0	0
Arts and Sciences, Dean's Office	0	40,000	470,175
Biology	747,459	441,836	913,032
Chemistry	645,971	216,585	949,776
Chemistry; Biology (Joint Proposal)	6,250	0	0
Communication Sciences and Disorders	17,000	12,750	74,350
English	48,000	66,000	81,500
Geography	6,500	0	247,000
History	0	0	0
Humanities	0	0	0
Indian Studies	0	0	0
Integrated Studies	0	0	0
Interdisciplinary Studies	0	0	0
Languages	0	0	0
Mathematics	11,800	11,000	12,000
Music	3,871	0	0
Philosophy and Religion	0	0	0
Physics	175,709	316,784	285,699
Psychology	13,692	0	170,106
Psychology-INPSYDE	200,000	250,000	247,992
School of Communication	12,500	53,501	250,000
Sociology	0	0	0
Sociology-Social Science Research Institute	107,799	184,034	124,038
Summer Institute of Linguistics	94,441	0	0
Theatre Arts	12,624	4,822	0
TOTALS	\$2,809,274	\$1,994,935	\$4,326,503

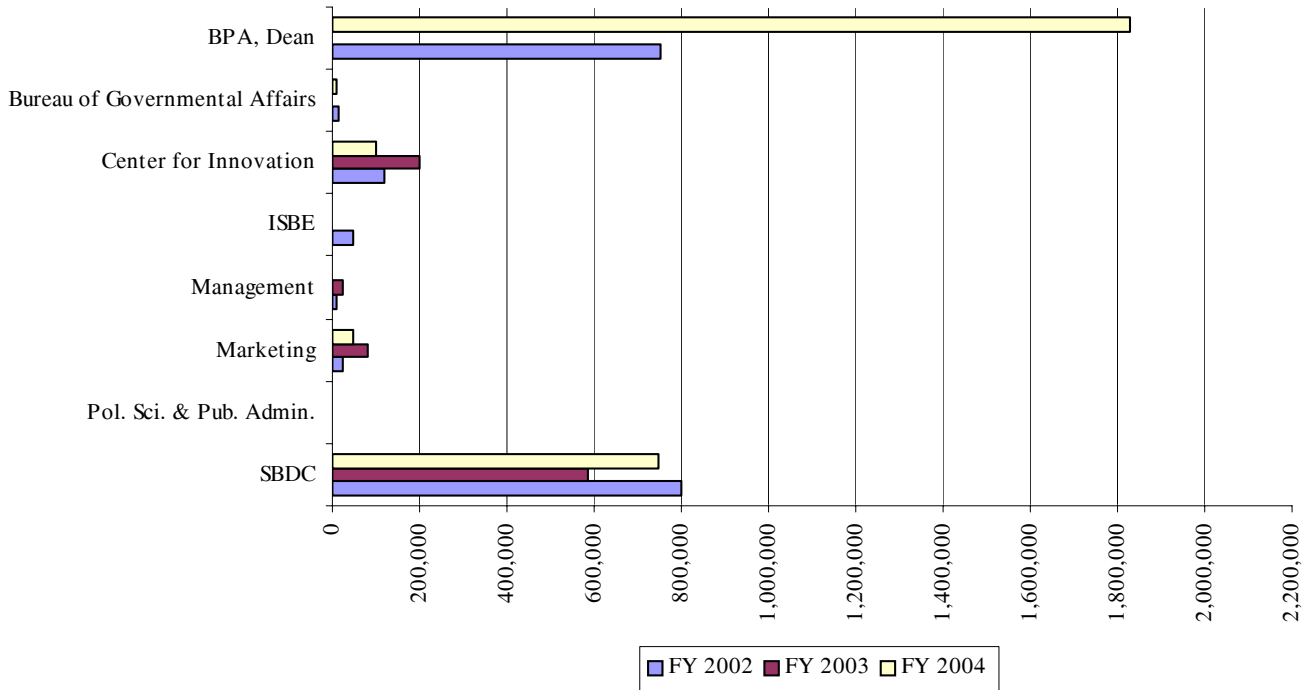
Figure 3-5. Grants and Contracts Received by the College of Arts and Sciences: FY 2002-2004



**Table 3-5. Grants and Contracts Received by the College of Business and Public Administration:
FY 2002-FY 2004**

Department	FY 2002	FY 2003	FY 2004
Accountancy	\$ 0	\$ 0	\$ 0
Business and Public Administration, Dean's Office	750,000	0	1,826,419
Bureau of Governmental Affairs	15,553	4,000	10,949
Center for Innovation	119,230	199,000	99,000
Economics	0	0	0
Finance	0	0	0
Information Systems and Business Education	46,612	5,000	4,150
Management	10,000	25,000	0
Marketing	25,330	82,089	47,060
Political Science and Public Administration	0	0	6,851
Small Business Development Center	802,308	585,500	746,500
Technology	0	0	0
TOTALS	\$1,769,033	\$900,589	\$2,740,929

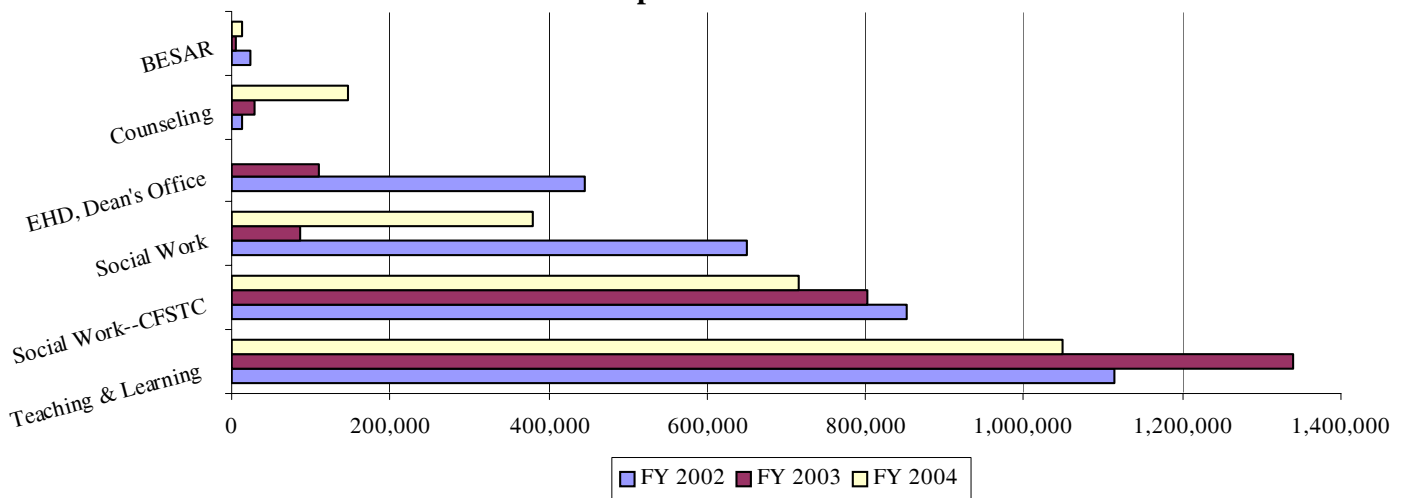
Figure 3-6. Grants and Contracts Received by the College of Business and Public Administration: FY 2002-2004



**Table 3-6. Grants and Contracts Received by the College of Education and Human Development:
FY 2002-2004**

Department	FY 2002	FY 2003	FY 2004
Bureau of Educational Services and Applied Research	\$ 24,790	\$ 6,480	\$ 13,130
Counseling	13,874	28,000	146,097
Education and Human Development, Dean's Office	444,959	111,080	0
Educational Foundations and Research	0	0	0
Educational Leadership	0	0	0
Physical Education and Exercise Science	0	0	0
Social Work	651,111	86,326	378,894
Social Work--Children and Family Services Training Center	853,089	801,831	714,760
Teaching and Learning	1,115,526	1,340,851	1,048,014
TOTALS	\$3,103,349	\$2,374,568	\$2,300,895

Figure 3-7. Grants and Contracts Received by the College of Education and Human Development: FY 2002-2004



**Table 3-7. Grants and Contracts Received by the John D. Odegard School of Aerospace Sciences:
FY 2002-FY 2004**

Department	FY 2002	FY 2003	FY 2004
Aerospace Network	\$ 15,000	\$ 10,000	\$ 944,000
Aerospace Science Division	0	0	206,000
Atmospheric Sciences	603,753	1,205,988	980,453
Atmospherium	0	3,830	4,081
Aviation	23,747	578,913	201,967
Aviation Instruction	0	0	563,308
Computer Science	0	36,771	16,000
Earth System Science Institute	3,645,175	2,649,190	3,267,187
Flight Operations and Training	0	90,821	175,822
Regional Weather Information Center	1,064,659	539,244	1,327,973
Space Studies	597,542	784,400	976,186
TOTALS	\$5,949,876	\$ 5,899,157	\$8,662,977

**Figure 3-8. Grants and Contracts Received by the John D. Odegard
School of Aerospace Sciences: FY 2002-2004**

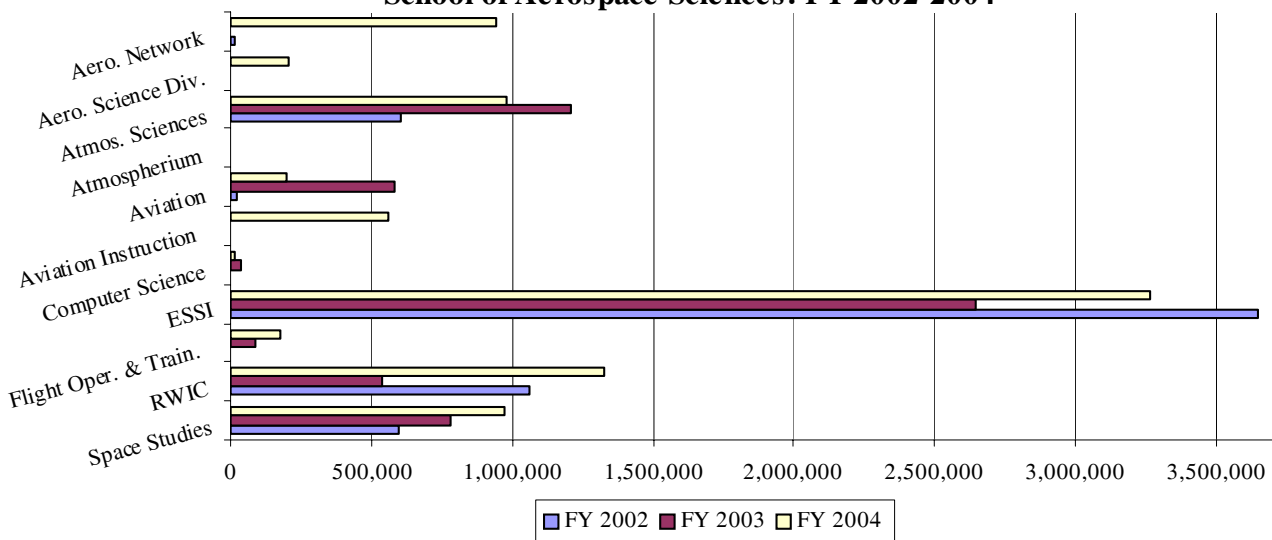


Table 3-8. Grants and Contracts Received by the College of Nursing: FY 2002-FY 2004

Department	FY 2002	FY 2003	FY 2004
Family and Community Nursing	\$ 0	\$ 0	\$ 0
Nursing	347,877	1,001,474	705,880
Nursing–RAIN Program	375,623	373,284	0
Nutrition and Dietetics	0	69,000	90,600
Practice and Role Development	0	0	0
TOTALS	\$723,500	\$1,443,758	\$796,480

Figure 3-9. Grants and Contracts Received by the College of Nursing: FY 2002-2004

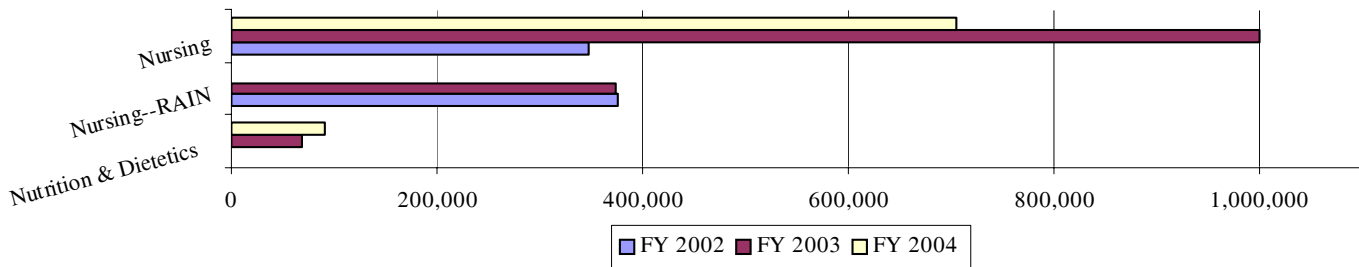


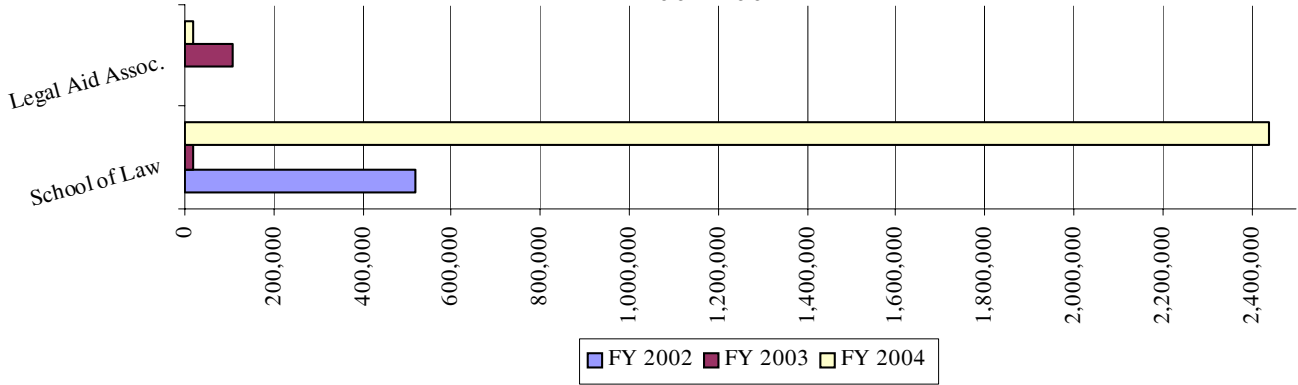
Table 3-9. Grants and Contracts Received by the School of Engineering and Mines: FY 2002-FY 2004

Department	FY 2002	FY 2003	FY 2004
Chemical Engineering	\$ 0	\$ 354,042	\$ 91,303
Chemical Engineering; Electrical Engineering	0	0	150,000
Civil Engineering	118,640	118,297	32,654
Electrical Engineering	0	49,021	42,655
Geology and Geological Engineering	162,195	355,184	413,094
Mechanical Engineering	170,279	192,755	325,790
TOTALS	\$451,114	\$1,069,299	\$1,055,496

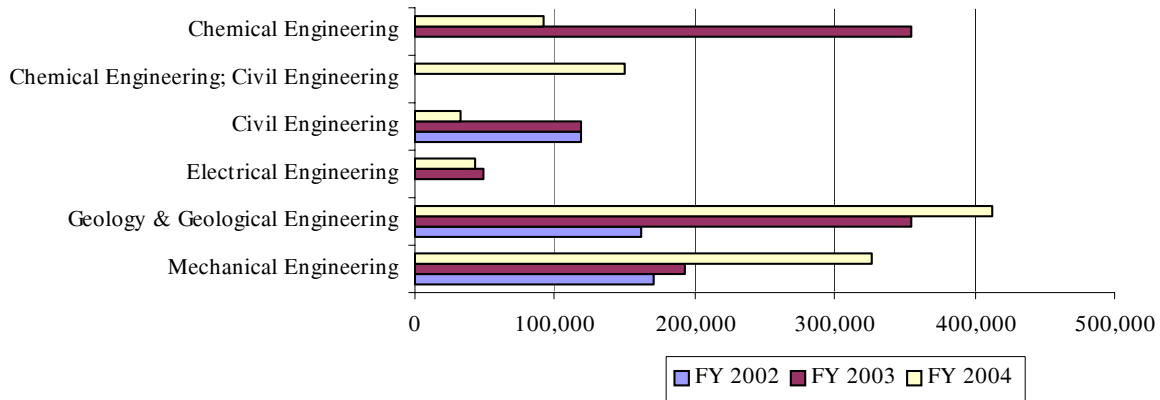
Table 3-10. Grants and Contracts Received by the School of Law: FY 2002-FY 2004

Department	FY 2002	FY 2003	FY 2004
Legal Aid Association	\$ 4,810	\$105,511	\$ 20,000
School of Law	517,329	20,622	2,439,611
TOTALS	\$522,139	\$126,133	\$2,459,611

**Table 3-11. Grants and Contracts Received by the School of Law:
FY 2002-2004**



**Figure 3-10. Grants and Contracts Received by the School of Engineering
and Mines: FY 2002-2004**



**Table 3-11. Grants and Contracts Received by the School of Medicine and Health Sciences:
FY 2002-FY 2004**

Department	FY 2002	FY 2003	FY 2004
Academic Affairs and Information Resources	\$ 72,066	\$ 1,000,000	\$ 298,050
Administration and Finance	59,528	3,018,759	144,340
Anatomy and Cell Biology	263,350	0	38,658
Biochemistry and Molecular Biology	2,211,085	2,698,732	3,003,322
Biochemistry and Molecular Biology; Anatomy and Cell Biology	0	196,510	0
Center for Rural Health	409,415	2,982,068	4,369,826
Center for Rural Health; Medical Education	0	234,344	216,184
Center for Rural Health-CHPTR	0	7,200	50,550
Community Medicine	1,390,389	36,665	189,557
Family Medicine	346,432	305,640	475,600
Family Practice Center-Grand Forks	0	0	53,600
Indians into Medicine	1,442,905	1,302,610	1,314,035
Internal Medicine	61,599	120,000	122,500
Internal Medicine; Pharmacology, Physiology and Therapeutics	0	0	20,000
Library of Health Sciences	82,782	59,275	72,867
Medicine and Health Sciences, Dean's Office	1,711,741	0	615,094
Microbiology and Immunology	866,747	763,447	768,519
Neuroscience	660,465	541,641	137,878
North Dakota AIDS Education and Training Center	0	2,500	0
Obstetrics-Gynecology	0	0	0
Occupational Therapy	0	0	0
Office of Medical Education	0	0	820,761
Pathology	0	0	0
Pediatrics	605,249	668,179	372,192
Pediatrics-Fargo	0	0	4,360
Pediatrics; Neuroscience; North Dakota Fetal Alcohol Syndrome Center	13,500	0	0
Pharmacology, Physiology and Therapeutics	1,509,925	7,872,284	3,159,610
Physical Therapy	254,908	159,888	67,448
Physical Therapy; Pharmacology, Physiology and Therapeutics	0	20,500	0
Research Affairs	0	0	350,448
Southwest Campus-Bismarck	14,000	12,500	0
Student Affairs and Admissions	0	0	15,000
Surgery	0	529,956	529,956
TOTALS	\$11,976,086	\$22,532,698	\$17,210,355

Figure 3-12. Grants and Contracts Received by the School of Medicine and Health Sciences: FY 2002-FY 2004

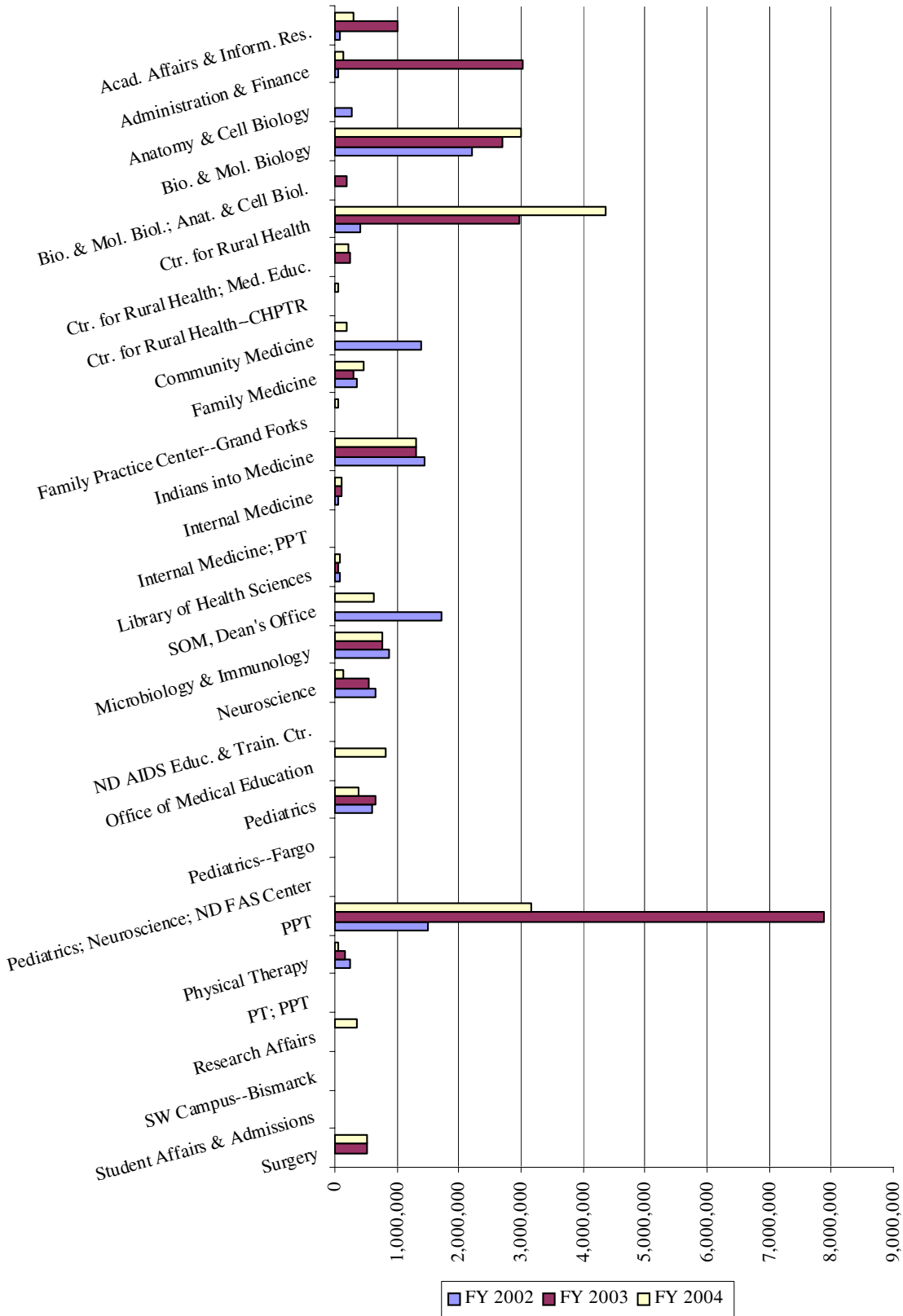
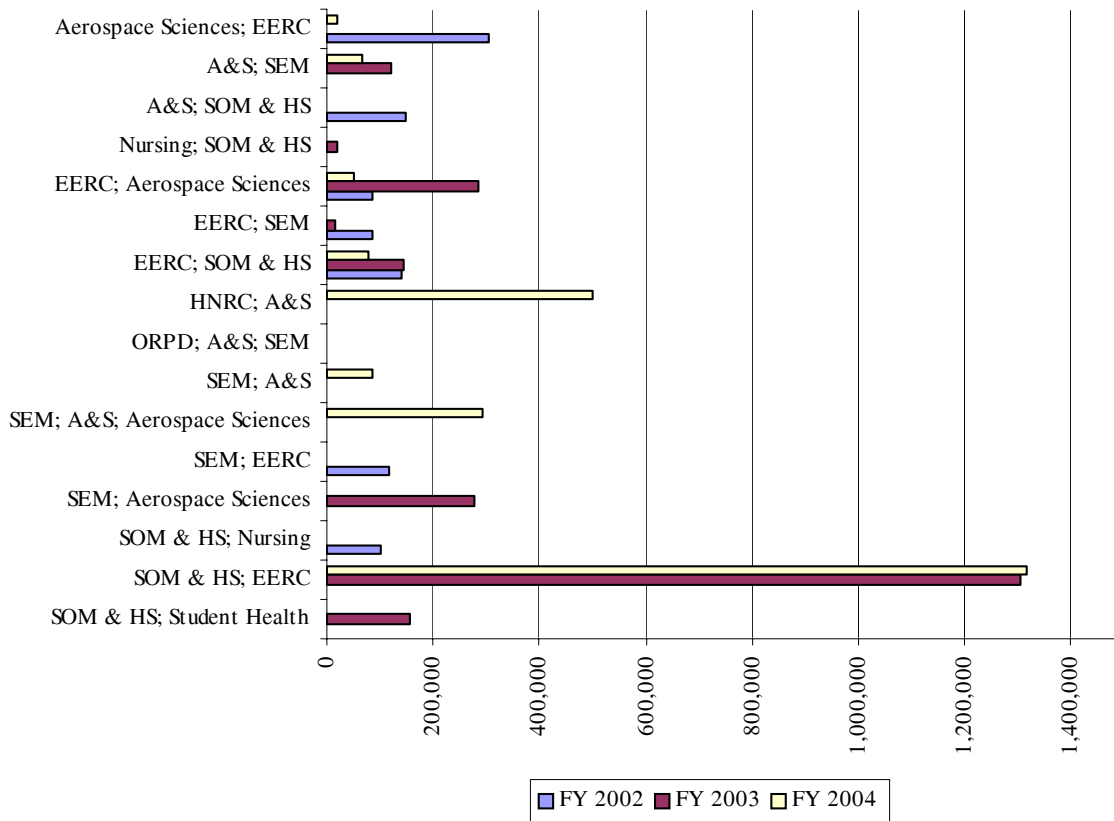


Table 3-12. Multidisciplinary Grants and Contracts: FY 2002-FY 2004

Department	FY 2002	FY 2003	FY 2004
College of Arts and Sciences; School of Engineering and Mines	\$ 0	\$ 120,986	\$ 66,507
College of Arts and Sciences; School of Medicine and Health Sciences	149,800	0	0
College of Nursing; School of Medicine and Health Sciences	0	20,500	0
Energy and Environmental Research Center; John D. Odegard School of Aerospace Sciences	86,074	285,000	50,000
Energy and Environmental Research Center; School of Engineering and Mines	84,153	15,000	0
Energy and Environmental Research Center; School of Medicine and Health Sciences	141,874	144,911	79,833
Human Nutrition Research Center; College of Arts and Sciences	0	0	500,000
John D. Odegard School of Aerospace Sciences; Energy and Environmental Research Center	306,036	0	20,886
Office of Research and Program Development; College of Arts and Sciences; School of Engineering and Mines	4,800	0	0
School of Engineering and Mines; College of Arts and Sciences	0	0	84,000
School of Engineering and Mines; College of Arts and Sciences; John D. Odegard School of Aerospace Sciences	0	0	293,254
School of Engineering and Mines; Energy and Environmental Research Center	115,847	0	0
School of Engineering and Mines; John D. Odegard School of Aerospace Sciences	0	279,071	0
School of Medicine and Health Sciences; College of Nursing	102,952	0	0
School of Medicine and Health Sciences, Energy and Environmental Research Center	0	1,306,339	1,315,792
School of Medicine and Health Sciences; Student Health Services	0	156,545	0
TOTALS	\$991,536	\$2,328,352	\$2,410,272

Figure 3-13. Multidisciplinary Grants and Contracts: FY 2002-FY 2004



The ND-EPSCoR Program is reported as a lump sum of money received by UND from both federal and state sources. These combined funds are then awarded to University faculty on a competitive basis. The principal investigators are located within several colleges including the John D. Odegard School of Aerospace Sciences, College of Arts and Sciences, School of Engineering and Mines, College of Nursing, and School of Medicine and Health Sciences. If the individual awards were posted to the faculty in the colleges ultimately receiving the funds, the total amount for those colleges would increase. For a complete listing of EPSCoR awards, please see Tables 4-1 - 4-12 (pages 56-59).

Table 3-13 presents a breakdown of grants and contracts received at the University of North Dakota in Fiscal Year 2004 by administrative unit and type of activity. Activities are classified as follows:

Academic Support includes projects intended to provide support services for the University's primary missions of instruction, research, and public service.

Construction includes funds designated for construction of new facilities or major remodeling of present facilities.

Instruction includes all activities that are part of the instructional program.

Institutional Support includes activities concerning the management, long-range planning, fiscal operations, personnel, etc., of the entire University.

Operation and Plant Maintenance includes funds for operation and maintenance of the physical plant.

Public Service includes all projects established primarily to provide noninstructional services beneficial to individuals and groups external to the University.

Research includes all projects specifically organized to produce research/creative outcomes.

Scholarships and Fellowships include grants to students resulting from selection by the institution or from an entitlement program.

Student Services includes activities whose primary purpose is to contribute to the student's emotional and physical well-being and intellectual, cultural, and social development outside an instruction program.

Figure 3-14 depicts the awards received in Fiscal Year 2004 by type of activity. It is noted that the "research" category accounted for 65.56 percent of the total or \$45,667,386. This is an increase from the \$41,880,185 in Fiscal Year 2003. Of the "research" total, 46.60 percent or \$21,284,751, is attributed to EERC, compared to 38.25 percent or \$16,019,474 in Fiscal Year 2003.

In Fiscal Year 2003, 5.96 percent of the total was attributed to "instruction"; this percentage increased to 6.62 percent in Fiscal Year 2004. "Public service" activities increased from 19.46 percent to 26.76 percent in Fiscal Year 2004. There were no "operation and plant maintenance" activities in Fiscal Year 2004; those activities represented 4.83 percent of the total in Fiscal Year 2003. "Scholarships/fellowships" decreased from .38 percent to .27 percent, and "student services" decreased from .91 percent to .79 percent in Fiscal Year 2004.

Table 3-14 presents information concerning activities that were funded by external grants and contracts during each year since 1982. The classification scheme was changed in Fiscal Year 1993; therefore, the table provides information based on the "old" system utilized Fiscal Years 1982-1992 and the "new" system established in Fiscal Year 1993.

Table 3-13. Grants and Contracts Received at UND by Unit and Type of Activity: FY 2004

Unit	Academic Support	Construction	Instruction	Institutional Support	Operation/ Plant Maintenance	Public Service	Research	Scholarships/ Fellowships	Student Services	TOTAL
Athletics						86,456				\$ 86,456
EERC							21,284,751			21,284,751
EERC; Aerospace Sciences							50,000			50,000
EERC; Medicine & Health Sciences						79,833				79,833
Aerospace Sciences						790,943	7,872,034			8,662,977
Aerospace Sciences; EERC							20,886			20,886
Arts & Sciences			658,328			865,713	2,802,462			4,326,503
Arts & Sciences, Engineering & Mines							66,507			66,507
Business & Public Administration						2,693,869	47,060			2,740,929
Chester Fritz Auditorium						2,430				2,430
Chester Fritz Library						6,372				6,372
Education & Human Development			681,525			1,555,052	64,318			2,300,895
Engineering & Mines			42,655			271,436	741,405			1,055,496
Engineering & Mines; Arts & Sciences							84,000			84,000
Engineering & Mines; Arts & Sciences; Aerospace Sciences							293,254			293,254
Instructional Development						337,495				337,495
Law School						2,459,611				2,459,611
Medicine & Health Sciences			2,570,913			6,336,711	8,158,391	144,340		17,210,355
Medicine & Health Sciences; EERC						1,315,792				1,315,792
Nursing			659,331			90,600		46,549		796,480
VP for Finance & Operations						428,764				428,764
Human Nutrition Research Center							1,522,065			1,522,065
Human Nutrition Research Center; Psychology							500,000			500,000
North Dakota EPSCoR Program							2,160,253			2,160,253
Enrollment Management						1,154,791			550,753	1,705,544
Outreach Programs						92,500				92,500
Student Services						71,957				71,957
TOTALS			\$4,612,752			\$18,640,325	\$45,667,386	\$190,889	\$550,753	\$69,662,105
Percent of Total			6.62%			26.76%	65.56%	.27%	.79%	100.0%

Figure 3-14. Grants and Contracts Received at UND by Type of Activity: FY 2004

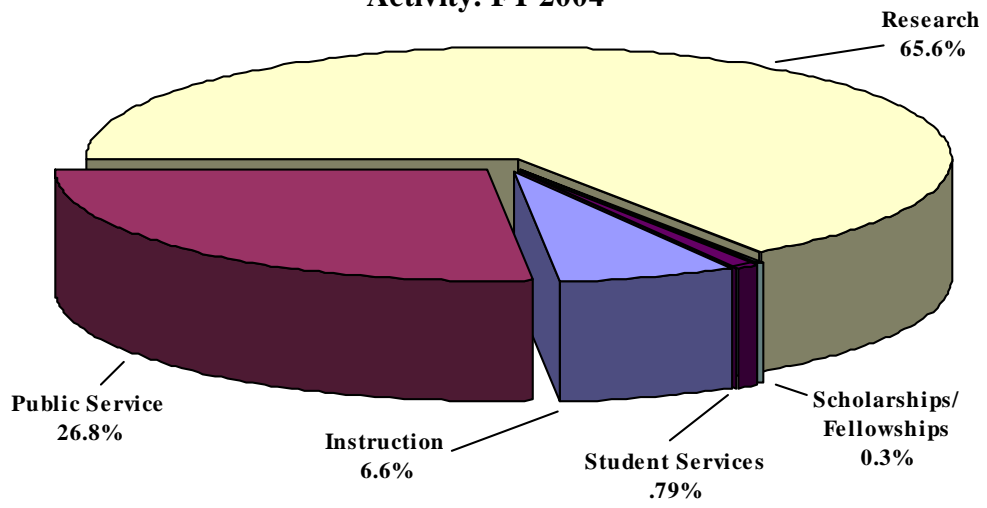


Table 3-14. Grants and Contracts Received at UND by Type of Activity: FY 1982-FY 2004

Fiscal Year	Academic Support	Construction	Fellowships/ Training	Instruction	Institutional Support	Operation/ Plant Maintenance	Program Development	Public Service	Research	Scholarships/ Fellowships	Service	Student Services	Totals
1982			360,731				3,059,199		4,826,133		1,715,373		9,961,436
1983			537,485				2,429,723		9,113,943		1,483,173		13,564,324
1984			1,282,226				3,011,799		11,907,267		1,492,089		17,693,381
1985			2,311,000				2,697,873		16,908,000		1,642,582		23,559,455
1986			1,347,250				3,900,487		17,352,083		1,582,079		24,181,899
1987			859,731				3,606,388		15,961,853		2,222,425		22,650,397
1988			633,422				3,961,556		16,859,043		2,332,793		23,786,814
1989			452,028				4,985,270		18,070,713		1,607,248		25,115,259
1990			902,333				6,767,134		23,957,434		1,290,531		32,917,432
1991		4,022,590	2,200,994				9,427,634		22,182,157		1,974,575		39,807,950
1992		11,525,304	1,899,373				3,358,850		18,953,674		3,110,402		38,847,603
1993		1,808,080		5,759,241				6,281,624	26,271,516	110,006		373,284	40,603,751
1994				6,910,896	65,146	71,153		8,655,527	24,339,178	344,212		1,087,453	41,473,565
1995		5,902,269		4,173,367				7,149,048	27,196,400	251,681		759,808	45,432,573
1996				4,006,516	71,879			9,732,717	35,751,397	180,375		1,319,314	51,062,198
1997	23,000	138,000		3,252,251				7,562,736	22,310,315	116,418		275,293	33,678,013
1998				3,794,036				7,045,530	22,654,531	88,043		1,201,004	34,783,144
1999				2,437,323	29,805			13,218,416	21,616,458	69,510		425,620	37,797,132
2000				4,877,291		781,803		9,341,656	25,828,094	346,481		440,630	41,615,955
2001				3,628,726		23,000		10,705,565	29,890,397	514,368		459,519	45,221,575
2002				4,863,330		4,000		11,493,458	37,680,826	102,375		525,786	54,669,775
2003				3,648,105		2,954,950		11,907,166	41,880,185	230,382		554,954	61,175,742
2004				4,612,752		0		18,640,325	45,667,386	190,889		550,753	69,662,105

SECTION II. UNRESTRICTED FUNDS ACTIVITY

In addition to the external sources of sponsored research funding discussed in Section I, research and scholarly activities support is provided by several sources at the University of North Dakota.

A. Institutional Research Fund (IRF)

The Institutional Research Fund (IRF) was established in Fiscal Year 1982 to promote, expand, and reward research activities on the University of North Dakota (UND) campus. Funds deposited in the IRF are equivalent to 50 percent of the indirect costs received from those sponsored research and service projects which generated indirect costs at the full, allowable government-approved rate or at a rate which was the maximum allowed by the sponsor. Monies in the IRF, in turn, are allocated through the following four programs.

1. ORPD Research Fund

A total of \$111,100 was allocated to the ORPD Research Fund in Fiscal Year 2004, and \$5,174 was carried over from Fiscal Year 2003. An additional \$25,000 was transferred from ORPD operating funds to the Research Fund. Expenditures from the Research Fund are discussed in detail in Section III, starting on page 45. These funds were distributed to University faculty and units during Fiscal Year 2004 by the Interim Director of the Office of Research and Program Development in response to formal requests.

2. Senate Scholarly Activities Committee

A total of \$55,550 was allocated from the IRF for distribution by the Senate Scholarly Activities Committee (SSAC) in Fiscal Year 2004. The Committee also received a supplemental, one-time award of \$63,860 from the Vice President for Research to be expended during Fiscal Year 2004. The SSAC meets several times each year to award grants which support research, travel, and publication activities of faculty and staff. These funds are requested through grant proposals submitted to the SSAC. Deadlines for submission of proposals are announced in the *University Letter* and on ORPD's Homepage. During Fiscal Year 2004, the SSAC awarded \$131,349 (includes previously awarded funds that were returned to the Committee for reaward) to 113 faculty members in 48 departments. Eight New Faculty Scholar Awards were made in Fiscal Year 2004, for a total of \$40,000. Individual awards made by the SSAC are listed in Appendix D. Table 3-15 and Figure 3-15 show the distribution of SSAC awards among campus units. Table 3-16 and Figure 3-16 show the distribution by the type of award.

**Table 3-15. Awards Made by the Senate Scholarly Activities Committee
by University Unit: FY 2004**

Unit	Amount
College of Arts and Sciences	\$ 61,616
College of Business and Public Administration	12,728
College of Education and Human Development	7,751
College of Nursing	6,096
John D. Odegard School of Aerospace Sciences	21,104
School of Engineering and Mines	13,726
School of Engineering and Mines; John D. Odegard School of Aerospace Sciences	5,000
School of Medicine and Health Sciences	2,993
Vice President for Academic Affairs and Provost	335
TOTAL	\$131,349

Figure 3-15. Awards Made by the Senate Scholarly Activities Committee by University Unit: FY 2004

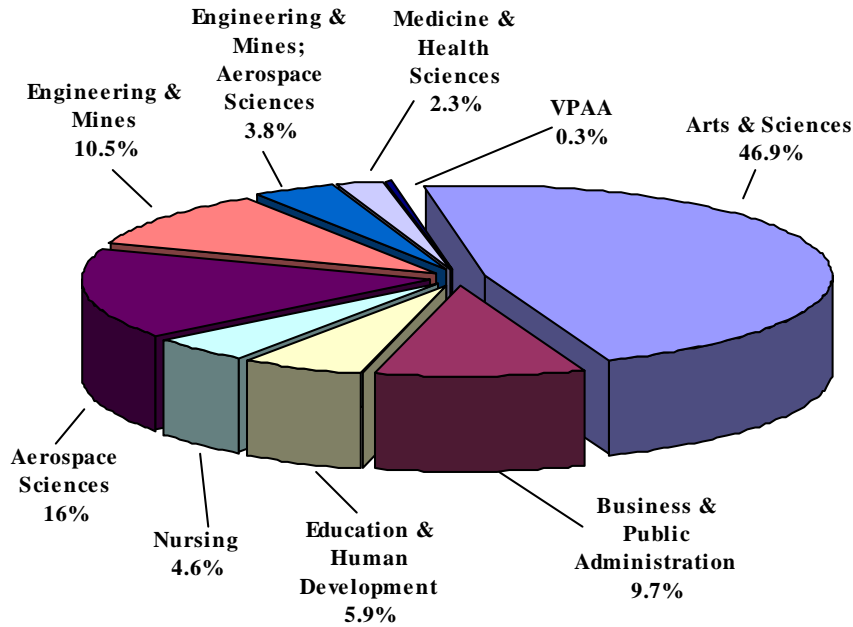
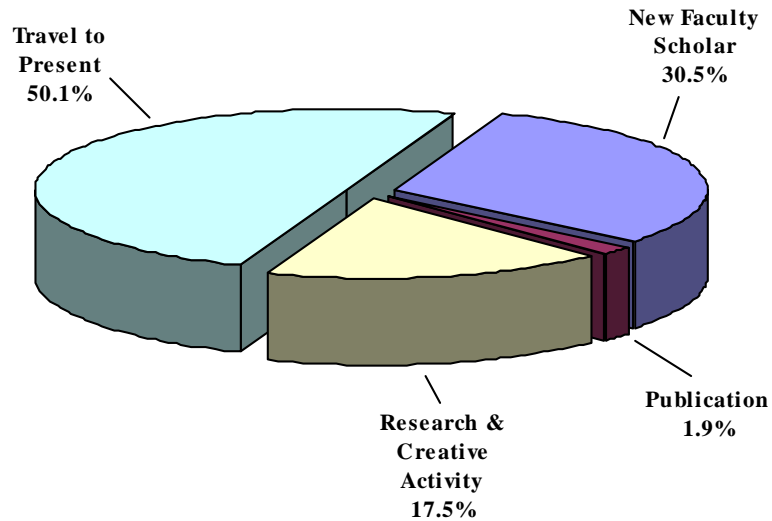


Table 3-16. Awards Made by the Senate Scholarly Activities Committee by Type of Award: FY 2004

Unit	Amount
New Faculty Scholar Awards	\$ 40,000
Publication	2,500
Research and Creative Activity	23,009
Travel to Present	65,840
TOTAL	\$131,349

Figure 3-16. Awards Made by the Senate Scholarly Activities Committee by Type of Award: FY 2004



3. Graduate School Stipends

Each year the Graduate School is allotted funds from the IRF for the purpose of supporting graduate students. In Fiscal Year 2004 the Graduate School received \$34,629 from this fund.

4. Indirect Cost Monies Sharing Program

Forty-three departments/organized research units benefitted from the University's policy of returning, through the IRF, a portion of the indirect costs generated by external awards. These were funds from awards in previous years but expended in Fiscal Year 2003; the rebate share was awarded to the respective departments in Fiscal Year 2004. University Senate policy states that each unit receiving indirect cost rebate monies must expend those monies for research-related purposes in keeping with a plan submitted to, and approved by, the Senate Scholarly Activities Committee.

The staff of the Budget Office calculates the departmental allocations from the IRF based on the indirect costs that were generated in a given fiscal year. This means that the departmental allocations are based on funds that were actually expended, rather than on funds awarded. Thus, there is a delay between the date of the award of a grant and the availability of the corresponding indirect cost return monies to the originating department or unit. A total of \$1,977,338 was returned to the departments/organized research units in Fiscal Year 2004. This is an increase of 65 percent from Fiscal Year 2003 when \$1,200,921 was returned to originating units. The IRF allocations are summarized in Table 3-17.

Table 3-17. IRF Allocations Generated in FY 2003 and Awarded in FY 2004

Department/Organized Research Unit	Amount	College Totals
AEROSPACE SCIENCES	\$ 609,425	\$ 609,425
ARTS AND SCIENCES		102,104
Anthropology	34,850	
Biology	52,298	
Chemistry	9,704	
College of Arts and Sciences	3,415	
Physics	487	
School of Communication	455	
Sociology	895	
BUSINESS AND PUBLIC ADMINISTRATION		56,043
Center for Innovation	5,158	
College of Business and Public Administration	50,885	
EDUCATION AND HUMAN DEVELOPMENT		30,785
Children and Family Services Training Center	17,464	
College of Education and Human Development	5,886	
Social Work	7,435	
ENGINEERING AND MINES		57,683
Chemical Engineering	17,885	
Civil Engineering	5,129	
Electrical Engineering	4,777	
Geology and Geological Engineering	22,144	
Mechanical Engineering	7,101	
School of Engineering and Mines	647	
LAW	26,458	26,458
MEDICINE AND HEALTH SCIENCES		1,014,018
Anatomy and Cell Biology	40,274	
Biochemistry and Molecular Biology	119,979	
Center for Rural Health	35,697	
Community Medicine and Rural Health	3,907	
Family Practice Center-Grand Forks	1,874	
Library of the Health Sciences	578	
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Table 3-17. Continued		

Microbiology and Immunology	66,103	
Neuroscience	48,468	
Office of the Dean, School of Medicine and Health Sciences	443,633	
Pathology	1,381	
Pediatrics-Fargo	31,272	
Pharmacology, Physiology and Therapeutics	107,736	
Physiology	3,448	
Physical Therapy	2,783	
Research Affairs	54,658	
School of Medicine and Health Sciences	13,666	
Southwest Campus	264	
Surgery	38,297	
NURSING		3,142
College of Nursing	2,653	
Nutrition and Dietetics	489	
VICE PRESIDENT FOR ACADEMIC AFFAIRS AND PROVOST		163
Chester Fritz Library	163	
VICE PRESIDENT FOR FINANCE AND OPERATIONS		13,793
Environmental Training Institute	13,793	
VICE PRESIDENT FOR STUDENT AND OUTREACH SERVICES		63,724
Native American Programs	2,485	
Outreach Programs	27,880	
Talent Search	33,359	
GRAND TOTAL	\$1,977,338*	\$1,977,338*

* Individual awards were rounded to the nearest \$1.

B. State-Appropriated Funds for Research

The State also appropriates funds to the University for research-related activities. The distribution of state-appropriated funds for research in Fiscal Year 2004 is shown in Table 3-18.

Table 3-18. State-Appropriated Funds for Research: FY 2004

Research/Service Activity	Full Amount	Salaries
American Indian Program–Grant Writer	\$ 4,356	\$ 4,000
Fringe Benefits		306
Bureau of Educational Services and Applied Research	30,000	
Central Legal Research	2,480	
Faculty Research Seed Money	206,960	119,240
Fringe Benefits		9,011
Fringe Benefits - Research	31,712	31,712
Patents and Licensing	17,403	
Research - Workstudy	43,837	
Summer Graduate Research Professorships	19,155	19,155
TOTAL	\$355,903	\$183,424

C. Faculty Research Seed Money Fund

The Faculty Research Seed Money Fund, a grassroots faculty initiative at the University, was established in Fiscal Year 1999-2000 to help faculty members gather data to strengthen their research proposals to funding organizations such as the National Science Foundation (NSF), the National Institutes of Health (NIH), and other governmental and private agencies. Funds are provided through a partnership between the City of Grand Forks, the UND Foundation and the University of North Dakota.

In Fiscal Year 2004, 25 awards totalling \$731,868 were awarded to faculty in 20 departments. Table 3-19 lists the Faculty Research Seed Money awards which were made in Fiscal Year 2004. As of May 31, 2004, \$40,094,830 had been requested in external grant funds related to the FRSM awards, and \$4,948,689 had been

received. However, several of the proposals which had been funded are multi-year awards so the total awarded from the currently funded proposals could eventually reach \$8,579,000.

The winning proposals were selected by a review committee consisting of the chairs of eight disciplinary review committees. The Committee based its choices on the likelihood that information gathered through these projects would help make the researchers more competitive in the national funding arena. Attracting more national funding to the University and increasing the level of faculty research at UND are goals of the Fund. UND will continue to work to encourage growth in the fund. The Fund is administered by the Office of Research and Program Development. Table 3-20 and Figure 3-17 summarize the Faculty Research Seed Money awards by University Unit.

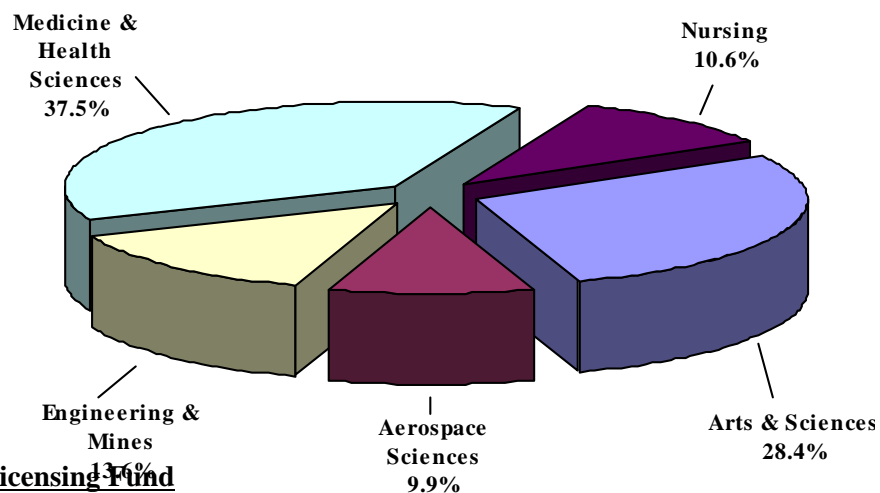
Table 3-19. Faculty Research Seed Money Awards: FY 2004

Principal Investigator	Department	Title	Amount
Anderson, Cindy M.	Nursing	Effects of Reduced Utero-Placental Perfusion in Pregnancy-Induced Hypertension and Fetal Growth Restriction: Consequences for Future Development of Cardiovascular Disease	\$ 40,000
Burin, Eric A.	History	Liberia Bound: The American Colonization Society and the Slavery Controversy	12,877
Garrett, Scott H.	Pathology	Metallothionein Isoform Three (MT-3) and Neurodegenerative Disease	40,000
Goodwin, Brett J.	Biology	Insect Communities on Prairie Patches: The Impact of Habitat Fragmentation and the Surrounding Landscape	24,447
Heuer, Loretta J.	Practice and Role Development	Provision of Health Care to Hispanic Migrant Farm Workers with Diabetes in Seasonal Satellite Nurse-Managed Centers	37,891
Holzman, Gregory S.	Community Medicine	A Customized Public Health Practice Training Course for Tribal Health Department Directors: A Pilot Project for North Dakota Tribes	39,825
Lei, Saobo	Pharmacology, Physiology and Therapeutics	Tachykinin Modulation of Neural Network Activity	39,960
Mamaghani, Iraj H. P.	Civil Engineering	Experimental and Analytical Studies on Cyclic and Seismic Performance of Steel Structures	39,706
Mann, Michael D.; Seames, Wayne S.	Chemical Engineering	Electrical Infrastructure for Combustion Test Furnace	34,812
McLennan, Kathleen A.	Theatre Arts	Seed Grant Proposal	23,380
Mikulak, Marcia L.	Anthropology	Assessment of Domestic Violence in Grand Forks County	35,000
Miller, Joseph C.	Psychology	Development of Tests for Persons with Visual Impairments	25,000
Mochoruk, James D.	History	Winnipeg and an Oppositional Consciousness	12,493
Moulton, Patricia L.	Center for Rural Health	Comparison of Health, Nutrition and Cognitive Status in Young and Older Adults	25,000
Muus, Kyle J.	Center for Rural Health	North Dakota Health Providers' Self-Assessment of Knowledge, Skills and Preparedness for Treating Pesticide-Contaminated Patients	39,850
Picklo, Matthew J., Jr.	Pharmacology, Physiology and Therapeutics	Analysis of Chiral trans-4-Hydroxy-2-nonenal Isomers	39,830
Poellot, Michael R.	Atmospheric Sciences	Development of an Atmospheric Monitoring and Intensive Ground Observations Site: AMIGOS	33,000
Sadeh, Eligar	Space Studies	Access to Space: The Evolution of an Idea and Technology	39,529
Sahmoun, Abe E.	Internal Medicine	A Case-Control Study of Hypertension and Risk of Brain Metastases	10,000
Semke, William H.	Mechanical Engineering	Novel Techniques and Materials for Enhanced Remote Sensing Platforms	25,000
Singh, Brij B.	Biochemistry and Molecular Biology	Defining the Role of Transient Receptor Potential Protein-3 (TRPC3) in Brain and Hippocampal Neurons	40,000
Stahl, Lothar	Chemistry	Rational Design and Synthesis of New Biomaterials	20,000
Swisher, Wayne E.	Communication Sciences and Disorders	The Effect of Aging on Speech Production	11,800
Vaughan, Jefferson A.	Biology	Potential of Avian Filarial Worms to Enhance Mosquito Transmission of West Nile Virus Among Birds in the Northern Great Plains	40,000
Weinstein, Jack R.	Philosophy and Religion	Seed Money Grant Proposal	2,468
TOTAL FACULTY RESEARCH SEED MONEY AWARDS			\$731,868

Table 3-20. Awards Made by the Faculty Research Seed Money Council by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$207,465
College of Nursing	77,891
John D. Odegard School of Aerospace Sciences	72,529
School of Engineering and Mines	99,518
School of Medicine and Health Sciences	274,465
TOTAL	\$731,868

Figure 3-17. Awards Made by the Faculty Research Seed Money Council by University Unit: FY 2004



D. Patenting/Licensing Fund

In Fiscal Year 2003-2004, funds carried over from Fiscal Year 2002-2003 (\$34,992) were used to support patenting and licensing at UND. Those funds were used to pay legal fees incurred in filing patent applications.

E. Grantsmanship Fund

Beginning in Fiscal Year 2000, the ORPD and the University Writing Center have offered a proposal writing workshop for faculty during the Spring Semester. The goals of the workshop are to increase faculty proposal submissions to external funding agencies and to assist faculty in improving proposal quality. At the beginning of the Spring Semester, a call for applications to the workshop is sent to all academic departments and distributed in the *University Letter*. Applicants are requested to select a faculty mentor and to submit a plan for a proposal that would be developed during the workshop. The applications are competitive and each year the six applications viewed as most likely to succeed in submission to an external funding agency are selected. Applicants whose proposals are not selected are encouraged to continue developing their proposal and to visit with ORPD staff for assistance. In recognition that faculty time is valuable, ORPD offers compensation of \$1000 to both the applicant and mentor upon submission of the proposal to an external funding agency.

The workshop has exceeded expectations in reaching the established goals. Participation in the workshop has increased proposal submission by the participants and has resulted in significant success. As of June 30, 2004, 39 faculty and their mentors have participated in the workshop. Thirty-two of the proposals developed in the workshop have been submitted to external agencies. As of June 30, 2004, the 39 participants had submitted 155 proposals requesting \$38,981,095 and 23 of the proposals, totalling \$1,545,868, had been awarded. Thirty proposals, requesting a total of \$8,917,189 are pending. Table 3-21 lists Spring 2004 workshop participants.

Table 3-22 lists awards made during Fiscal Year 2004 to workshop participants who submitted their proposals (because proposal deadline dates vary, and some occur only once a year, participants often are unable to submit their proposal until the next fiscal year; thus, the awards made in Fiscal Year 2004 include participants from the past two workshops.) Table 3-23 and Figure 3-18 show the breakdown of the same awards by college.

Table 3-21. Grant Writing Mentorship Program Participants: FY 2004

Faculty Grant Writer/ Department	Faculty Mentor/ Department	Potential Sponsor	Estimated Proposal Amount
Bradley, April R. (Psychology)	Petros, Thomas V. (Psychology)	National Institute of Child Health and Human Development	\$ 50,000
Burin, Eric A. (History)	Mochoruk, James D. (History)	National Endowment for the Humanities	40,000
Gilley, Brian J. (Indian Studies)	Hill, Thomas M. (Microbiology and Immunology)	Wenner-Gren Foundation	11,850
Heuer, Loretta J. (Practice and Role Development)	Lindseth, Glenda N. (Director of Nursing Research)	Robert Wood Johnson Foundation or National Institutes of Health	100,000-400,000
Mamaghani, Iraj H. P. (Civil Engineering)	Ghassemi, Ahmad (Geology and Geological Engineering)	American Institute of Steel Construction	122,260
Sadeh, Eligar (Space Studies)	Gaffey, Michael J. (Space Studies)	National Aeronautics and Space Administration	209,007
Weinstein, Jack R. (Philosophy and Religion)	Grabe, Mark D. (Psychology)	National Endowment for the Humanities	40,000
TOTAL			\$573,117- \$873,117

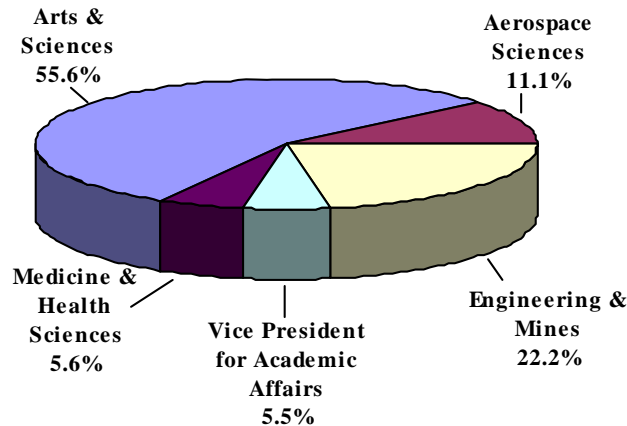
Table 3-22 Awards Made to Grantsmanship Workshop Participants After Submission of a Proposal to An External Agency: FY 2004

Principal Investigator	Department	Title	Amount Awarded
Burin, Eric A.	History	Grantsmanship Workshop Award	\$ 1,000
Chen, Jean Chi-Jen	Institutional Research	Grantsmanship Workshop Award	1,000
Chen, Tar-Pin	Physics	Grantsmanship Workshop Award (Mentor)	1,000
Dixon, Kathleen G.	English	Grantsmanship Workshop Award	1,000
Gaffey, Michael J.	Space Studies	Grantsmanship Workshop Award (Mentor)	1,000
Ghassemi, Ahmad	Geology and Geological Engineering	Grantsmanship Workshop Award (Mentor)	1,000
Gilley, Brian J.	Indian Studies	Grantsmanship Workshop Award	1,000
Goodwin, Brett J.	Biology	Grantsmanship Workshop Award	1,000
Grabe, Mark D.	Psychology	Grantsmanship Workshop Award (Mentor)	1,000
Hill, Thomas M.	Microbiology and Immunology	Grantsmanship Workshop Award (Mentor)	1,000
Kolodka, Edward B.	Chemical Engineering	Grantsmanship Workshop Award	1,000
Mamaghani, Iraj H. P.	Civil Engineering	Grantsmanship Workshop Award	1,000
Mann, Michael D.	Chemical Engineering	Grantsmanship Workshop Award (Mentor)	1,000
Marshall, David F.	English	Grantsmanship Workshop Award (Mentor)	1,000
Mochoruk, James D.	History	Grantsmanship Workshop Award (Mentor)	1,000
Sadeh, Eligar	Space Studies	Grantsmanship Workshop Award	1,000
Schlosser, Isaac J.	Biology	Grantsmanship Workshop Award (Mentor)	1,000
Weinstein, Jack R.	Philosophy and Religion	Grantsmanship Workshop Award	1,000
TOTAL GRANTSMANSHIP WORKSHOP AWARDS			\$18,000

Table 3-23. Grantmanship Workshop Awards by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$10,000
John D. Odegard School of Aerospace Sciences	2,000
School of Engineering and Mines	4,000
School of Medicine and Health Sciences	1,000
Vice President for Academic Affairs	1,000
TOTAL	\$18,000

Figure 3-18. Grantsmanship Workshop Awards by University Unit: FY 2004



F. North Dakota EPSCoR Travel Fund

In Fiscal Year 2003-2004, ORPD received \$15,000 from the North Dakota EPSCoR Program to be awarded to faculty and graduate students for travel. Recipients attended eighteen different conferences and two workshops. Table 3-24 lists the awards made during Fiscal Year 2004. Table 3-25 and Figure 3-19 show the breakdown of those awards by University unit.

Table 3-24. North Dakota EPSCoR Travel Awards: FY 2004

Principal Investigator	Department	Title	Amount
Brendle, Jennifer	Psychology	Travel to Present a Paper at the Association for the Advancement of Behavior Therapy Convention	\$ 494
Brookman, David	Geography	Travel to Present Thesis at a Meeting of the North Dakota Game and Fish Office	137
Brookman, David	Geography	Travel to Present a Paper at the Association of Applied Geography Conference in Colorado Springs, Colorado	496
Chen, Tar-Pin	Physics	Travel to Attend the National Science Foundation EPSCoR Program for Centers Development Initiative (CDI) First Regional Conference	296
Drach, Robyn	Psychology	Travel to Present a Paper at the Association for the Advancement of Behavioral Therapy (AABT) Conference	503
Evans, Anna	Psychology	Travel to Present a Paper at the American Psychological Association Annual Convention	500
Hanson, Darlene S.	Nursing	Travel to Present a Paper at the European Pressure Ulcer Advisory Panel Conference	750
Haugen, Erin	Psychology	Travel to Present a Paper at a National Psychology Conference	500
Hillman, Kristin	Pharmacology, Physiology and Therapeutics	Travel to Present a Paper at the Society for Neuroscience Annual Conference	500

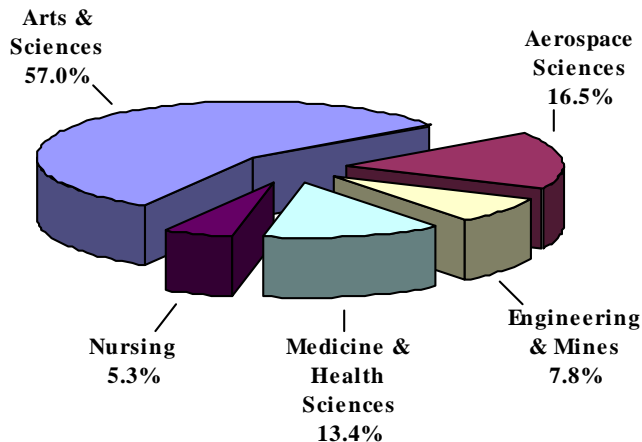
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Table 3-24. (Continued)			
Hoffmann, Mark R.	Chemistry	Travel to Present a Paper and Chair a Session at the Theory and Applications of Computational Chemistry Conference	1,000
Hoffmann, Mark R.	Chemistry	Funds for Graduate Students to Travel to Present Papers at the American Chemical Society Meeting	1,638
Holden, Diane	Geography	Travel to Present a Poster at the American Correction Association Conference	500
Hulst, Nicholas	Electrical Engineering	Travel to Present a Paper at the IEEE Aerospace Conference	464
Josephs, Richard L.	Geology and Geological Engineering	Travel to Attend a Soil Micromorphology Workshop	637
Krysanski, Valerie	Psychology	Travel to Present a Paper at the Association for the Advancement of Behavior Therapy Convention	494
Lavallee, Yan	Space Studies	Travel to Present a Paper at the International Union of Geodesy and Geophysics Conference/IAVCEI	700
Listug-Lunde, Lori	Psychology	Travel to Present a Paper at the 37th Annual Convention of the Association for the Advancement of Behavior Therapy	500
Liu, Jun	Computer Science	Travel to Attend a National Science Foundation Workshop for Practitioners Working in Foundational and Applied Research Areas of Pervasive Computer and Networking	639
Lofton, Cynthia	Communication Sciences and Disorders	Travel to Present Papers at the American Speech-Language-Hearing Association (ASHA) National Convention	500
Magelssen, Trygve	Space Studies	Travel to Present a Paper at the International Lunar Conference	500
Pervez, Shahriar	Space Studies	Travel to Present a Paper at the 30th Annual Third World Conference	500
Sondag, Cindy M.	Pharmacology, Physiology and Therapeutics	Travel to Present a Paper at Neuroscience 2003	393
Thomasson, Kathryn A.	Chemistry	Travel to Present a Paper at the Biophysical Society Meeting	500
Woster, Andy	Pharmacology, Physiology and Therapeutics	Travel to Present a Paper at the National Society for Neuroscience Meeting	498
Yan, Xiaohong	Anatomy and Cell Biology	Travel to Present a Poster at the FASEB Experimental Biology Meeting	500
TOTAL EPSCoR TRAVEL AWARDS			\$14,139

Table 3-25. North Dakota EPSCoR Travel Awards by University Unit: FY 2004

Unit	2004
College of Arts and Sciences	\$ 8,058
College of Nursing	750
John D. Odegard School of Aerospace Sciences	2,339
School of Engineering and Mines	1,101
School of Medicine and Health Sciences	1,891
TOTAL	\$14,139

Figure 3-19. North Dakota EPSCoR Travel Awards by University Unit: FY 2004



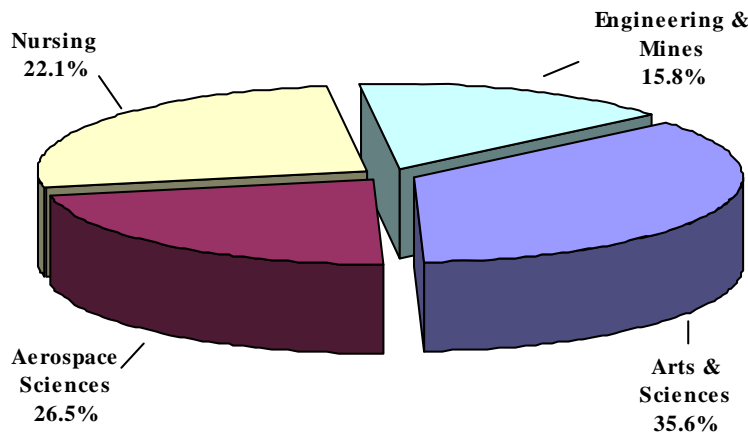
G. Vice President for Academic Affairs Awards

During Fiscal Year 2003-2004, the Vice President for Academic Affairs awarded \$126,516 to new faculty to help them establish their research programs and develop proposals for external support. Table 3-26 and Figure 3-20 show the distribution of those awards among campus units.

Table 3-26. Start-Up Awards Made by the Vice President for Academic Affairs by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$ 45,000
College of Nursing	28,000
John D. Odegard School of Aerospace Sciences	33,516
School of Engineering and Mines	20,000
TOTAL	\$126,516

Figure 3-20. Start-Up Awards Made by the Vice President for Academic Affairs by University Unit: FY 2004



H. Vice President for Research Awards

During Fiscal Year 2003-2004, the Vice President for Research awarded \$387,561 to faculty as matching funds for grants or equipment purchases. Table 3-27 and Figure 3-21 show the distribution of those awards among campus units. The Vice President also awarded \$76,791 in discretionary funds. Table 3-28 and Figure 3-22 show the breakdown of those awards by college.

Table 3-27. Matching Awards Made by the Vice President for Research by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$ 91,999
College of Education and Human Development	30,000
John D. Odegard School of Aerospace Sciences	180,751
School of Engineering and Mines	84,811
TOTAL	\$387,561

Figure 3-21. Matching Funds Awards Made by the Vice President for Research by University Unit: FY 2004

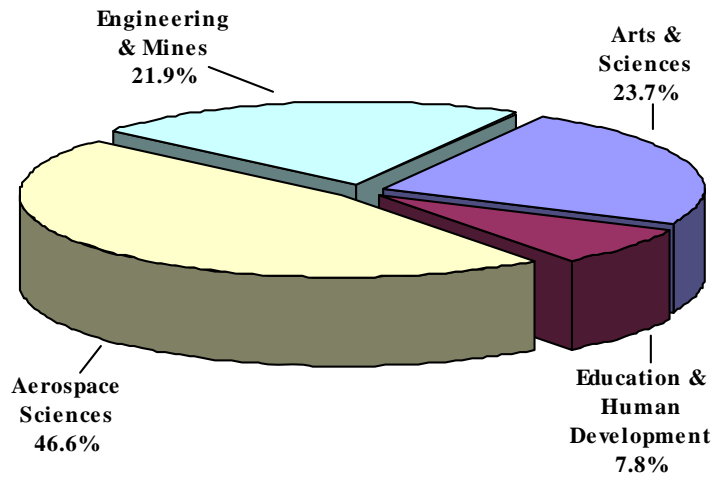
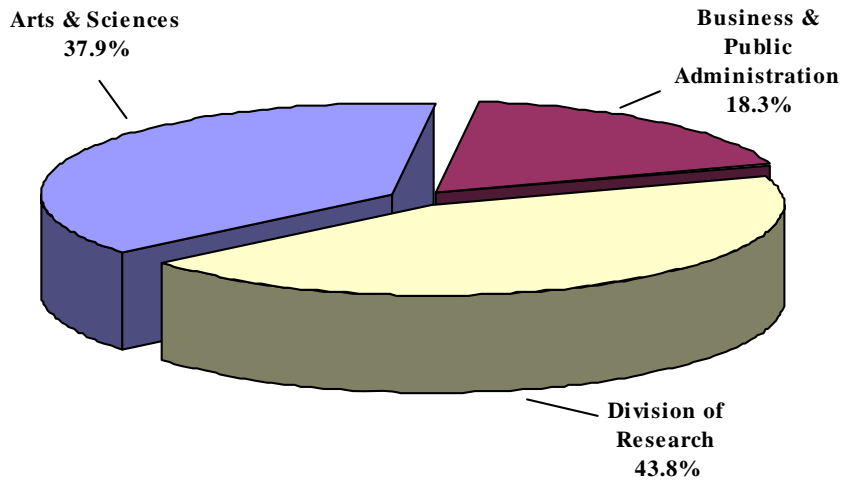


Table 3-28. Discretionary Awards Made by the Vice President for Research by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$29,122
College of Business and Public Administration	14,025
Division of Research	33,644
TOTAL	\$76,791

Figure 3-22. Discretionary Awards Made by the Vice President for Research by University Unit: FY 2004



I. Unrestricted Awards at the University of North Dakota by Type of Activity and Unit

Table 3-29 and Figure 3-23 show the distribution of Unrestricted Awards at the University of North Dakota during Fiscal Year 2004 by type of activity.

Table 3-29. Unrestricted Awards by Type of Activity: FY 2004

Unit	Lecture Series and Conferences	Matching	Publication	Research	Start-Up	Travel to Present	Travel (Other)	TOTAL
Faculty Research Seed Money Council				\$731,868				\$ 731,868
Grantwriting Workshop Awards				18,000				18,000
Office of Research and Program Development	\$7,450	\$ 35,250		29,027	\$ 35,000	\$19,849	\$10,079	136,655
Senate Scholarly Activities Committee			\$2,500	63,009		65,840		131,349
Vice President for Academic Affairs Start-Up Awards					126,516			126,516
Vice President for Research Matching Awards		\$ 387,561						387,561
Vice President for Research Discretionary Awards*				55,931				55,931
TOTALS	\$7,450	\$422,811	\$2,500	\$897,835	\$161,516	\$85,689	\$10,079	\$1,587,880

* Additional awards made from this fund are included in the totals for the Senate Scholarly Activities Committee (supplemental award of \$13,860 for travel awards) and the Proposal Writing Workshop (\$7,000).

Figure 3-23 Unrestricted Awards at UND by Type of Activity: FY 2004

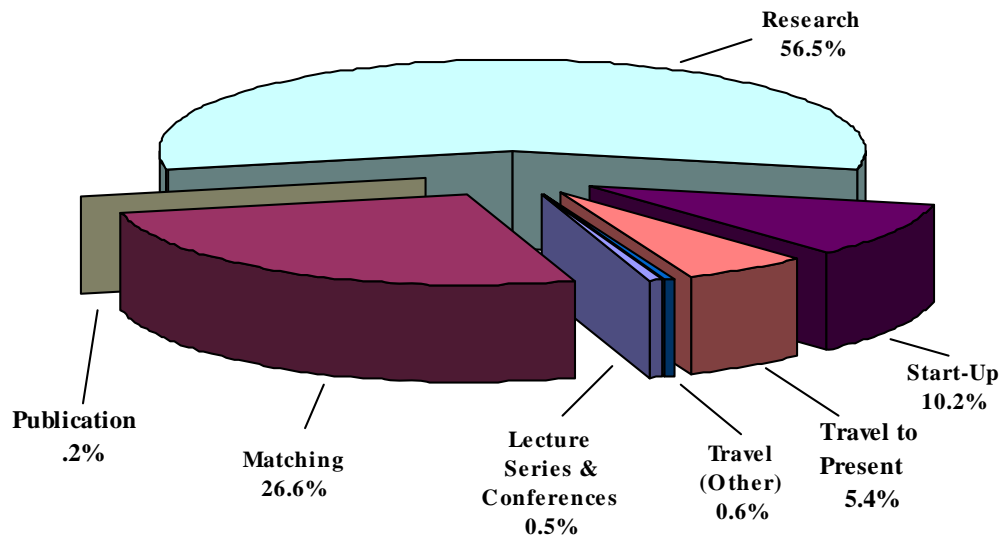
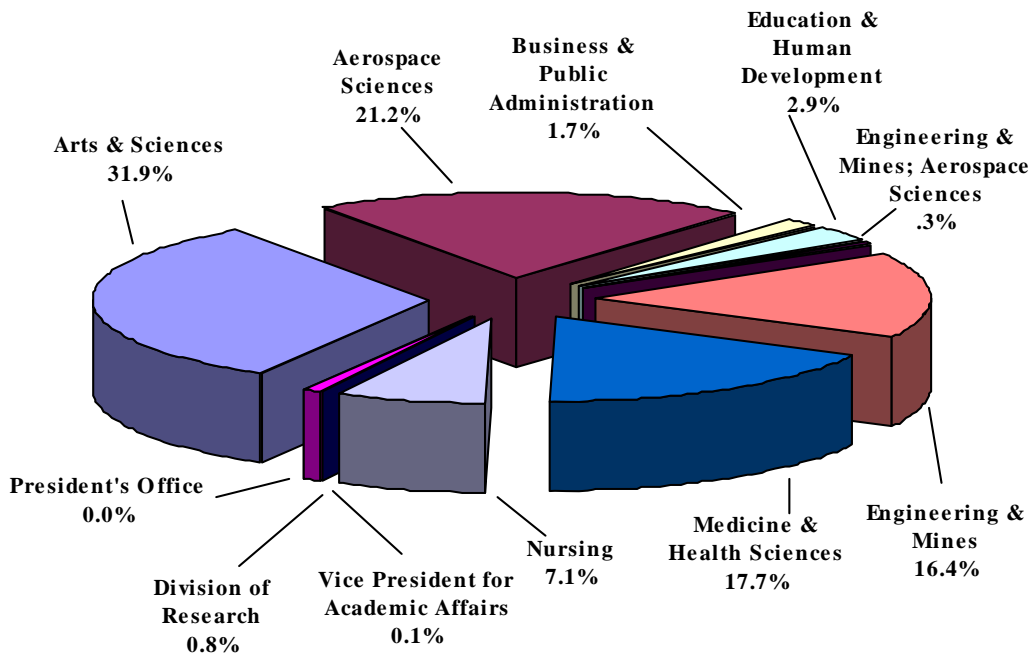


Table 3-30 and Figure 3-24 show the distribution of those awards among University units.

Table 3-30. Unrestricted Awards by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$ 506,384
College of Business and Public Administration	26,753
College of Education and Human Development	46,261
Division of Research	12,784
John D. Odegard School of Aerospace Sciences	335,970
Nursing	112,202
Office of the President	237
School of Engineering and Mines	259,740
School of Engineering and Mines; John D. Odegard School of Engineering and Mines	5,000
School of Medicine and Health Sciences	280,453
Vice President for Academic Affairs and Provost	2,096
TOTALS	\$1,587,880

Figure 3-24. Unrestricted Awards by University Unit: FY 2004



J. Research Funds Provided by Departments, Colleges, and the Alumni Association

Funds discussed in the preceding sections of this unit were provided primarily by the Division of Research. In addition, a survey of the Alumni Association, departments (28 responses received) and visits with each of the deans on campus revealed other sources of funds which were being used to support research on the UND campus. These funds, approximately \$1,588,049, consisting of state allocations, donations, alumni funds, and revenues generated from ongoing operations, were provided directly by the departments, deans and the Alumni Association.

SECTION IV. AWARDS FROM THE ORPD RESEARCH FUND

The Office of Research and Program Development encourages, promotes, and supports research and program development activities by awarding grants from the ORPD Research Fund. The administration of the University of North Dakota allocated \$111,100 to the ORPD Research Fund in Fiscal Year 2004. An additional \$25,000 was transferred to the Research Fund from ORPD operating funds. Table 3-31 indicates the amount of support that was awarded from this fund during each fiscal year of the past decade. The amounts awarded do not always equal the amounts that were available because some of the money awarded during the fiscal year was not used for various reasons and, consequently, was available for reallocation later in the year or in the following year. Awards in Fiscal Year 2004 totalled \$136,655.

Table 3-31. Awards from the ORPD Research Fund: FY 1994-FY 2004

Fiscal Year	Amount
1994	106,505
1995	110,070
1996	109,960
1997	97,970
1998	119,046
1999	121,415
2000	112,122
2001	114,250
2002	133,704
2003	138,852
2004	136,655

The awards made in Fiscal Year 2004 and in the previous two fiscal years are summarized by University unit in Table 3-32 and Figure 3-25. The awards were distributed among eight organizational units in Fiscal Year 2004. Major variations may occur year-to-year due to faculty turnover, major awards requiring matching funds, and the necessity to provide start-up funds.

Table 3-32. Awards from the ORPD Research Fund by University Unit: FY 2002-FY 2004

Unit	FY 2002	FY 2003	FY 2004
College of Arts and Sciences	\$ 51,960	\$ 46,349	\$ 61,182
College of Business and Public Administration	700	2,122	0
College of Education and Human Development	7,546	10,000	8,510
College of Nursing	4,573	2,000	215
John D. Odegard School of Aerospace Sciences	11,300	22,650	26,070
Office of the President	2,080	6,623	237
Office of the Vice President for Academic Affairs and Provost	0	528	761
School of Engineering and Mines	44,150	43,010	37,685
School of Medicine and Health Sciences	1,500	5,570	1,995
Senate Scholarly Activities Committee	9,895	0	0
TOTALS	\$133,704	\$138,852	\$136,655

Table 3-33 shows how these funds were utilized in Fiscal Year 2004 and the previous three fiscal years. Figure 3-26 depicts Fiscal Year 2004 awards by activity.

Figure 3-25. Awards from the ORPD Research Fund by University Unit: FY 2004

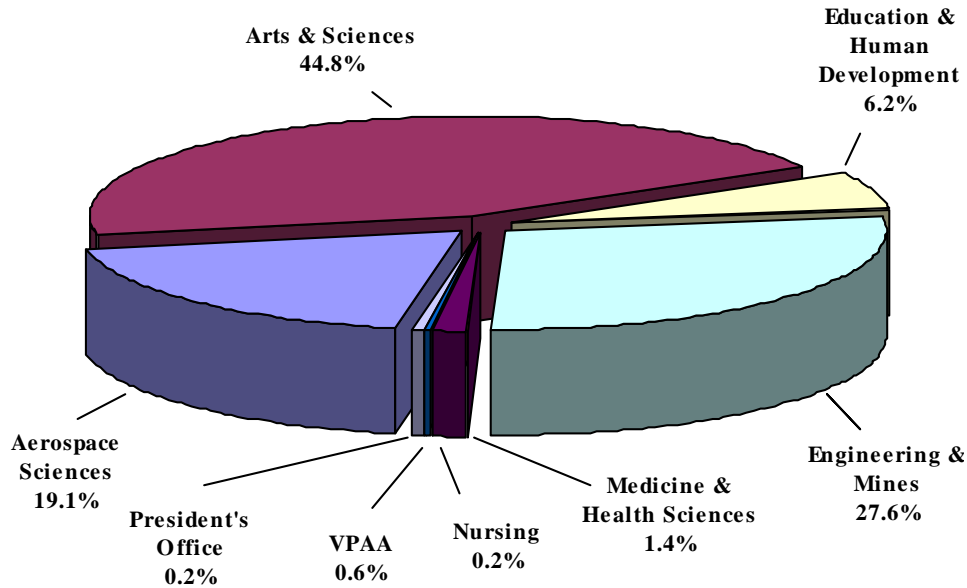
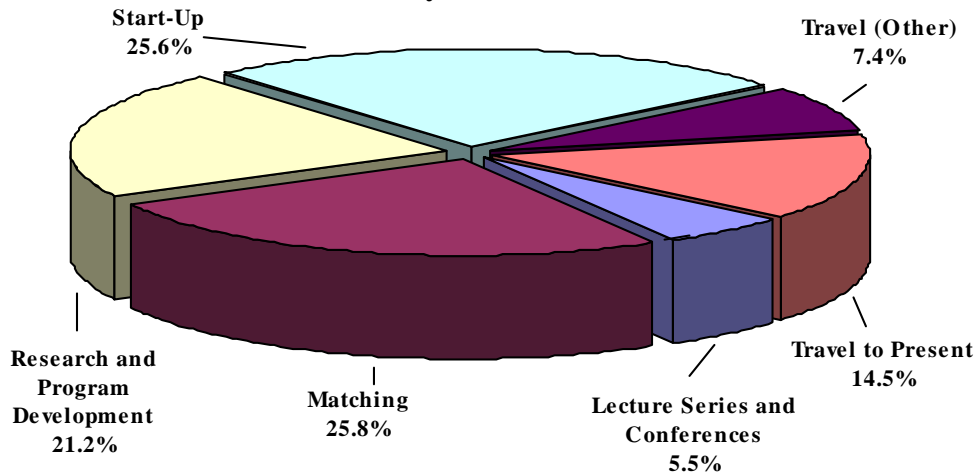


Table 3-33. Awards from the ORPD Research Fund by Activity: FY 2001-FY 2004

Use	FY 2001	FY 2002	FY 2003	FY 2004
Lecture Series and Conferences	\$ 0	\$ 0	\$ 5,500	\$ 7,450
Matching Awards	13,750	39,500	28,750	35,250
Publication Costs	952	0	817	0
Research and Program Development	33,701	14,380	23,039	29,027
Research Initiation and Interim Funding of Grants	6,200	17,300	0	0
Start-Up Funds for New Faculty	49,560	34,000	59,500	35,000
Travel--Other	4,046	10,877	7,305	10,079
Travel to Present Research Papers	6,041	17,647	13,941	19,849
TOTALS	\$114,250	\$133,704	\$138,852	\$136,655

Figure 3-26. Awards from the ORPD Research Fund by Activity: FY 2004



A. Lecture Series and Conferences

In order to enhance the research environment on campus and to facilitate interdisciplinary research efforts and collaboration, funds are made available to partially support campus lecture series or conferences. The following lecture series and conference awards were made in Fiscal Year 2004:

Kozliak, Evguenii I.	Chemistry	Funds to Pay an Honorarium for a Guest Lecturer	\$ 150
Kucera, Paul A.	Atmospheric Sciences	Partial Support for Guest Lecturer from the NASA/GSFC Wallops Flight Facility	800
Le Fever, Richard D.	Geology and Geological Engineering	Partial Funding for the Leading Edge of Earth and Planetary Sciences (LEEPS) Lecture Series: 2003-2004	1,500
Marasinghe, G. Kanishka	Physics	Partial Support for Department of Physics Colloquia Series	1,500
Smoliakova, Irina P.	Chemistry	Funds for Chemistry Seminar Series: 2003-2004	2,000
Weinstein, Jack R.	Philosophy and Religion	Partial Funding for Department of Philosophy and Religion Colloquium Series	1,500
TOTAL LECTURE SERIES AND CONFERENCE AWARDS			\$ 7,450

B. Matching Awards

Faculty may submit proposals to external funding agencies which, if funded, will require matching funds or contributions by the University of \$5,000 or less. Requests for larger match requirements are made directly to the Vice President for Research. The ORPD Director may obligate matching monies in anticipation that the submitted grant proposal will be funded. If the project is not funded, the monies are released and returned to the ORPD Research Fund for redistribution. In other cases, ORPD provides partial support for research equipment if the department, college, or other administrative unit or program participates in cost-sharing. The following matching awards were made in Fiscal Year 2004:

Ames, Forrest E.	Mechanical Engineering	Matching Funds to Purchase an Infrared Camera System	\$ 5,000
Ghassemi, Ahmad	Geology and Geological Engineering	Matching Funds for Grant Proposal to the U.S. Department of Energy	7,000
Guy, Mark D.	Teaching and Learning	Matching Funds for a PT3 Grant from the U.S. Department of Education	5,000
Haertel, Patrick T.	Atmospheric Sciences	Matching Funds for North Dakota EPSCoR Start-Up Proposal (First Year)	3,250
Haertel, Patrick T.	Atmospheric Sciences	Matching Funds for North Dakota EPSCoR Start-Up Proposal (Second Year)	5,000
Hardersen, Paul S.	Space Studies	Matching Funds for an EPSCoR Start-Up Proposal	5,000
Potvin, Martha A.; Kalbfleisch, Pamela J.	School of Communication	Matching Funds for Native American Media Center Grant from the Knight Foundation	5,000
TOTAL MATCHING AWARDS			\$35,250

C. Publication Awards

Because some professional journals require fees to publish articles, ORPD sometimes provides support for publication costs. No awards were made for publication costs in Fiscal Year 2004.

D. Research and Program Development

The following awards were made in Fiscal Year 2004 for a variety of research or program development projects:

Brown, Richard J.	Nursing	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	\$ 215
Dong, Xiquan	Atmospheric Sciences	Funds to Acquire and Update a Microwave Radiometer (MWR)	5,000
Gosnold, William D.	Geology and Geological Engineering	Funds for Research Project in Jordan	6,600
Iiams, Michele A.	Mathematics	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
LeDosquet, Phyllis I.	Teaching and Learning	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Liu, Jun	Computer Science	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Loewy, Michael I.	Counseling	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Mayzer, Roni A.	Criminal Justice	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Nitz, Michael E.	School of Communication	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Penwarden, James F.	University Relations	Additional Funds to Publish Research Articles in <i>University Letter</i> , July 1, 2003-June 30, 2004	237
Perkins, Dexter	Geology and Geological Engineering	Matching Funds to Purchase Equipment for the Petrology Laboratory	5,000
Poellot, Michael R.	Atmospheric Sciences	Partial Support for Radar System Upgrading	3,500
Ross, Vicki D.	Teaching and Learning	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Routon, Claudia J.	Modern and Classical Languages and Literatures	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Rundquist, Bradley C.	Geography	Funding for the Saltcedar Project in North Dakota	5,925
Scharf, Elizabeth A.	Anthropology	Funds to Attend Grantwriting Workshop Sponsored by Conference Services	215
Wenzel, Amy E.	Psychology	Funding for Miscellaneous Research Expenses	500
Wettersten, Kara B.	Counseling	Funding for Miscellaneous Research Expenses	115
TOTAL RESEARCH AND PROGRAM DEVELOPMENT AWARDS			\$29,027

E. Research Initiation and Interim Funding of Grants

On occasion, faculty who have externally funded research support find themselves between grants, in situations where a grant is insufficient to cover all costs of a project, or facing unexpected research expense. ORPD may provide supplemental support when grant budgets are reduced or are insufficient to cover the research costs. In some instances, ORPD provides interim support while investigators await decisions on their grant renewal requests. Awards are also made to explore the feasibility of a research plan or develop ideas preparatory to seeking external grants. No awards were made in this category in Fiscal Year 2004.

F. Start-Up Funds for New Faculty

In order to assist new faculty, ORPD works with deans and department chairpersons to provide research funds for new faculty so they can establish their research programs and develop proposals for external support. Deans and department chairpersons usually participate in cost-sharing. The funds are often used to purchase start-up equipment, including personal computers and laboratory equipment. During Fiscal Year 2004, the following awards were made to new faculty:

Cavalli, Matthew N.	Mechanical Engineering	Start-Up Funds for New Faculty	\$ 5,000
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Delbridge, Ewan E.	Chemistry	Start-Up Funds for New Faculty	5,000
Reeves, Anthony R.	Music	Start-Up Funds for New Faculty	5,000
Rhen, Turk E.	Biology	Start-Up Funds for New Faculty	5,000
Scharf, Elizabeth A.	Anthropology	Start-Up Funds for New Faculty	5,000
Stubblefield, Phoebe R.	Anthropology	Start-Up Funds for New Faculty	5,000
Zerr, Ryan J.	Mathematics	Start-Up Funds for New Faculty	5,000
TOTAL START-UP AWARDS FOR NEW FACULTY			\$ 35,000

G. Travel (Other)

In order to encourage faculty to submit proposals for external funding, ORPD provides travel funds to them for the purpose of visiting potential funding agencies to discuss research plans and gain information regarding preparing proposals. Visits to research laboratories and attendance at research workshops or symposia to learn new research skills/techniques and to gain information that will be helpful in developing proposals are also supported. The following travel awards were made in this category in Fiscal Year 2004:

Benoit, Virgil P.	Modern and Classical Languages and Literatures	Travel to Meet with Officials of the Council for French Life in North America (CVFA)	\$ 992
Chen, Tar-Pin	Physics	Travel to Attend the EPSCoR Sciences and Technology Research Center Workshop	753
Chen, Tar-Pin	Physics	Travel to Attend a National Science Foundation Regional Conference	500
Gerla, Philip J.	Geology and Geological Engineering	Travel to Attend a Consortium of Universities for the Advancement of Hydrological Sciences (CUAHSI) Vision Paper Workshop	300
Homandberg, Gene A.	Biochemistry and Molecular Biology	Funds for Two Faculty Members to Attend the National Science Foundation Regional Conference	1,000
Moretti, Charles J.	Civil Engineering	Funds for Drs. Iraj Mamaghani and Yeo Howe Lim to Attend a National Science Foundation Regional Conference	1,000
Poellot, Michael R.	Atmospheric Sciences	Travel to Attend a Workshop on Ice Initiation	1,005
Routon, Claudia J.	Modern and Classical Languages and Literatures	Travel to Participate in a Program for North American University Professors of Spanish at the University of Granada, Spain	1,300
Towne, Gary S.	Music	Travel to Italy to Conduct Research on a Musical Edition of the Collected Works of Gaspar de Albertis	2,729
Won, Chang-Hee	Electrical Engineering	Travel to Attend the NSF Regional Conference in Minneapolis, Minnesota	500
TOTAL AWARDS FOR TRAVEL (OTHER)			\$ 10,079

H. Travel to Present Research Papers

To assist faculty in their professional development, ORPD provides financial support to attend meetings to present their research papers. The ORPD funds usually provide partial support of the travel expenses. These funds are generally awarded during the summer months when the Senate Scholarly Activities Committee (SSAC) does not meet or at those times when short timelines do not permit application to the SSAC. The following travel awards were made in Fiscal Year 2004:

Anderson, Christopher S.	Music	Travel to Present a Paper at the Hawaii International Conference on Arts and Humanities	\$ 1,000
Baldwin, Gayle R.	Philosophy and Religion	Travel to Present a Seminar at Bard College's Conference on God and Sexuality	500
Chen, Jean Chi-Jen	Institutional Research	Travel to Present a Paper at the 2004 Convention of the American College Personnel Association (ACPA)	761
Chen, Tar-Pin	Physics	Travel to Present a Paper at the 5th International Conference on New Theories, Discoveries, Superconductors and Related Materials	1,418

de Silva, Shanaka L.	Space Studies	Travel to Present a Paper at the Asia Oceania Geosciences Society Meeting	1,800
Dewar, Graeme A.	Physics	Travel to Present a Paper at the Society of Photo-Industrial Engineer's (SPIE) 48th Annual Meeting	500
Faruque, Saleh M.	Electrical Engineering	Travel to Present a Paper at the Wireless 2004 Conference	750
Fiordo, Richard A.	School of Communication	Travel to Present Papers at a DGSS Conference and a Conference Sponsored by the World Society of Adolescentology	1,550
Ghassemi, Ahmad	Geology and Geological Engineering	Travel to Present a Paper at the 6th North American Rock Mechanics Symposium (NARMS)	1,755
Hartman, Joseph H.	Geology and Geological Engineering	Travel to Present Papers at the 15th World Congress of Malacology and to Conduct Research in Australia	3,280
Houston, Eva M.	Counseling	Travel to Present a Paper at the Oxford Roundtable	1,000
Keyser, Dorothy K.	Music	Travel to Present a Paper at the Hawaii International Conference on Arts and Humanities	1,000
Kozliak, Evguenii I.	Chemistry	Travel to Present a Paper at the 16th International Congress on Chemical and Process Engineering	690
Messina, Constance J.	Counseling	Travel to Present a Paper at the Oxford Roundtable	1,000
Reza, Hassan	Computer Science	Travel to Present a Paper at the International Conference on Software Engineering Research and Practice (SERP'04)	500
Rieke, Garl K.	Anatomy and Cell Biology	Travel to Present a Paper at the 9th International Conference on Alzheimer's Disease and Related Disorders	995
Sweitzer, Richard A.	Biology	Travel to Participate in a USDA Forest Service Symposium on the Biology, Management and Control of Wild Pigs	600
Tepper, Nadine C.	Teaching and Learning	Travel to Present a Paper at the American Council on Rural Special Education (ACRES) Conference	750
TOTAL AWARDS FOR TRAVEL TO PRESENT RESEARCH PAPERS			\$ 19,849
TOTAL AWARDS FROM THE ORPD RESEARCH FUND: 2003-2004			\$136,655

PART IV

North Dakota EPSCoR Program Annual Report Fiscal Year 2004

Richard R. Schultz, Ph.D., Associate Project Director
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**University
of
North Dakota**

NORTH DAKOTA EPSCoR PROGRAM

The North Dakota Experimental Program to Stimulate Competitive Research (ND EPSCoR) Program supports a threefold mission:

- To be a driving force in building a strong research and development infrastructure throughout the State of North Dakota.
- To increase opportunities for North Dakota students and faculty to enhance their research capabilities.
- To develop strong linkages with business and industry in North Dakota.

The National Science Foundation (NSF) funded an EPSCoR Research Infrastructure Improvement (RII) grant in May 2002. This grant, in the amount of \$6.0 million, provides support for research infrastructure improvement, human resource development, and technology transfer over a three-year period, from May 1, 2002, through April 30, 2005. Additionally, the North Dakota Legislature has appropriated \$7.45 million in cash matching dollars for the ND EPSCoR Program since 2002. Funds are distributed through a number of competitive processes that support New Faculty Startup Awards, Graduate Research Assistantships, Doctoral Dissertation Assistantships, Equipment and Seed Awards, Advanced Undergraduate Research Awards, and awards to support the Technology Transfer of faculty and student inventions to the private sector. ND EPSCoR also provides similar opportunities through its Environmental Protection Agency (EPA), National Aeronautics and Space Agency (NASA), and National Institutes of Health (NIH) programs.

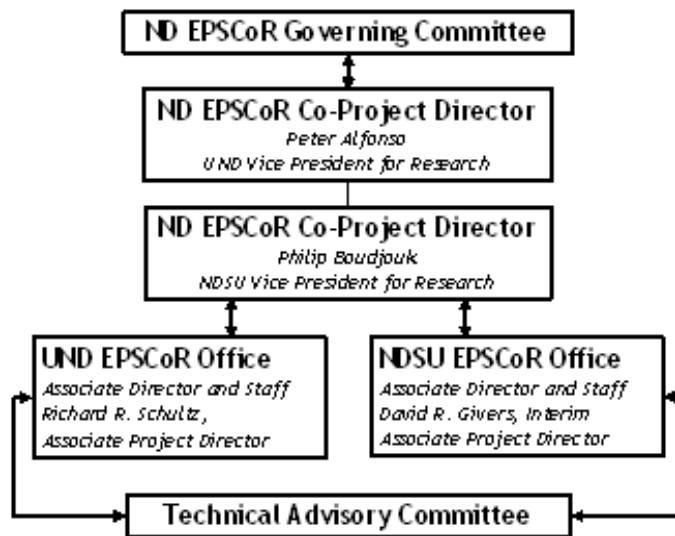
Major highlights of activities conducted during Fiscal Year 2004 are provided as follows:

A. Reorganization of ND EPSCoR

Since its inception in 1986, ND EPSCoR has been administered for the North Dakota University System (NDUS) by a steering committee composed of UND and North Dakota State University (NDSU) faculty members. In the past, there has been one ND EPSCoR Project Director (PD) reporting directly to the Chancellor of the North Dakota University System. Since Fiscal Year 2001 through December 31, 2003, the ND EPSCoR Project Director was Dr. Mark A. Sheridan, Professor of Biological Sciences at North Dakota State University. However, in the past five years, both UND and NDSU have created research divisions headed by separate Vice Presidents for Research to guide their growing operations. In response to this much needed executive-level reorganization, the Vice Presidents for Research decided that the EPSCoR program should become the research infrastructure development arm on each campus, with separate Associate Project Directors who report directly to their respective Divisions for Research. This was the primary impetus for reorganizing the program, which officially occurred on January 1, 2004. For many faculty at the University of North Dakota, this has been a welcome change, because now ND EPSCoR has equal representation on both campuses from an administrative standpoint.

ND EPSCoR has been functionally reorganized as shown in the Figure 4-1. Members of the Governing Committee include the Governor of North Dakota, four members of the North Dakota Legislature (two from the Senate and two from the House of Representatives), the Chancellor of the North Dakota University System, a representative of the five Tribal Colleges, one senior management official from each of two regional technology companies, and the ND EPSCoR Executive Leadership Team (ND EPSCoR Project Director and Co-Project Director).

Figure 4-1. North Dakota EPSCoR Organization



The ND EPSCoR Team consists of Dr.

Vice President for Research, and Dr. Philip Boudjouk, NDSU Vice President for Research, Creative Activities, and Technology Transfer. Drs. Alfonso and Boudjouk now serve as the EPSCoR RII Co-Project Directors (Co-PDs). Two Associate Project Directors were appointed on January 1, 2004, with reporting lines to their respective Vice Presidents for Research. Dr. Richard R. Schultz was appointed as the ND EPSCoR Associate Project Director at UND by Dr. Alfonso, and David R. Givers was appointed as the Interim Associate Project Director at NDSU by Dr. Boudjouk. The Co-PDs now provide guidance for the ND EPSCoR program on the campuses of the state's two research universities, while the Associate Project Directors serve as the implementers and integrators for ND EPSCoR. The Associate Project Directors have similar responsibilities as their single predecessor, but on their respective campuses.

Executive Leadership Peter Alfonso, UND

The Governing Committee, new to ND EPSCoR, formalizes its relationship to the state leadership and facilitates incorporation of state science and technology objectives into ND EPSCoR operations. Its major role is to ensure ND EPSCoR's fidelity to the state's science, technology, and human resource development initiatives. The ND EPSCoR Executive Leadership Team has established long-term informal relationships to the constituencies represented in the Governing Committee. The best evidence of that interaction has been the outstanding financial support given to EPSCoR in the past decade by the North Dakota State Legislature. The Governing Committee will monitor the progress toward goals and milestones and suggest modifications to the infrastructure improvement plan. This committee is positioned, by virtue of its membership, to help ND EPSCoR achieve sustainability through institutionalization of valued programs. The Executive Leadership Team is responsible for implementing changes to ND EPSCoR recommended by the Governing Committee and external review panels which evaluate Research Infrastructure Improvement activities. Because the Vice Presidents for Research are on this team, coordination with their respective sponsored research offices is ensured. With reporting lines directly to the University Presidents, the VPs are well-positioned to leverage resources for EPSCoR initiatives, to focus campus energy on emerging opportunities, and to engage the public in broadening their understanding of the roles of science in our society.

A Technical Advisory Committee consisting of faculty from each campus represents the science, engineering, and mathematics research communities. New collaborative efforts such as projects conducted through the Red River Valley Research Corridor and North Dakota Centers for Excellence, will be administrated jointly by the UND and NDSU EPSCoR offices in consultation with the Governing and Technical Advisory Committees.

B. National Science Foundation Program Managers

NSF EPSCoR Program Manager Karen Sandberg was invited to visit North Dakota in June 2004, in order to introduce her to the personnel associated with the reorganization of ND EPSCoR and to help her understand the effectiveness of the programs within our state. Ms. Sandberg has jurisdiction over the State of North Dakota at the National Science Foundation headquarters in Arlington, Virginia, and she has served as our NSF Program Manager throughout the most recent EPSCoR RII award. Karen visited the NDSU campus on June 8, 2004, and she visited with UND faculty and administrators on June 9, 2004. A dinner with the Executive Leadership Team and Associate Project Directors took place in Fargo on the evening of June 8th, in which prior performance and future initiatives were discussed. During her visit to the UND campus, Ms. Sandberg shared lunch with President Kupchella, Vice President Alfonso, and representatives from the science and technology academic units to discuss the importance of forming multidisciplinary research teams in order to be competitive in future NSF program solicitations. She also stressed that the sustainability of research efforts and the institutionalization of EPSCoR-initiated projects were the main goals of her program. On June 9th, Karen had a chance to discuss opportunities and challenges with UND faculty researchers representing the Computational Research Center (i.e., high performance computing), as well as the Neuroscience, Sustainable Energy, and Climate Variability research initiatives. Ms. Sandberg reported to the Executive Leadership Team that she received an excellent overview of the “state-of-EPSCoR” in North Dakota. Additionally, she was educated in potential future initiatives that will be proposed in the next three-year NSF EPSCoR Research Infrastructure Improvement competition.

On February 20, 2004, the National Science Foundation named Dr. Sherry O. Farwell to head the Foundation’s EPSCoR program. Dr. Farwell assumed the position full-time at NSF headquarters on July 1, 2004. Previously, he served as Dean of Graduate Education and Research and Professor of Atmospheric Sciences at the South Dakota School of Mines & Technology. Dr. Farwell held concurrent positions as Co-Director of South Dakota’s NSF EPSCoR Program and Director of the state’s NASA EPSCoR Program. Farwell holds a Ph.D. in analytical chemistry from Montana State University, and his experience as a successful educator and researcher includes former academic positions at Washington State University and the University of Idaho. Former NSF Director Rita Colwell selected Farwell as the result of an extensive nationwide search. She stated that “Sherry has a detailed knowledge of EPSCoR and the challenges that states face in developing their resources. I am convinced he will strengthen our partnerships and provide innovative leadership to this most important part of the NSF portfolio.”

C. New Initiatives

After Dr. Richard R. Schultz was appointed by Dr. Peter Alfonso as the ND EPSCoR Associate Project Director, effective January 1, 2004, he spent a significant portion of his time meeting with campus administrators to determine their perceived strengths and weaknesses of the ND EPSCoR program at the University of North Dakota. Meetings were held with Deans and Department Chairs within the College of Arts and Sciences, the College of Business and Public Administration, the College of Nursing, the John D. Odegard School of Aerospace Sciences, the School of Engineering and Mines, the School of Medicine and Health Sciences, and the UND Graduate School. From these conversations, it was apparent that the ND EPSCoR New Faculty Startup program was critically important for the science, engineering, and mathematics departments to be competitive in national and international faculty searches. Furthermore, the academic administrators were clearly behind the move to have a ND EPSCoR research administrator dedicated to the needs of University of North Dakota faculty. Flexibility in supporting faculty through EPSCoR funds was identified as the number one change needed to make the program more responsive to the campus research community.

An Open House was held on April 28, 2004, in the UND EPSCoR Office housed in Twamley Hall Room 415, for faculty to meet the new UND Associate Project Director. The UND EPSCoR Open House was organized by Cathy Lerud, ND EPSCoR Budget Coordinator, and Carla Kellner, part-time ND EPSCoR Administrative Assistant.

One extremely important initiative that was carried out during Fiscal Year 2004 was the purchase of high performance computing equipment for general-purpose use by UND faculty and their research partners. Dr. Peter Alfonso has been interested in establishing a high performance computing center at UND ever since he was named as the first Vice President for Research at the University of North Dakota, and he worked with Dr. Richard R. Schultz to leverage EPSCoR funds in establishing the Computational Research Center (CRC) in Fiscal Year 2004 Q4. Strategic planning funds were available from the current EPSCoR RII grant, which were utilized to purchase a 48-node computing cluster from Aspen Systems, Inc., consisting of 96 64-bit Opteron processors. A committee composed of high performance computing experts from Atmospheric Sciences/Regional Weather Information Center, Chemistry, and Computer Science/Computational Sciences, as well as the ND EPSCoR Associate Project Director and the Director of Information Technology Systems and Services (ITSS), met to create the equipment specifications and to collect and evaluate bids from Linux Beowulf cluster-based computing companies. Hardware was purchased through the auspices of ND EPSCoR Strategic Planning funds, while the operating system and compiler licenses were purchased by ITSS. ITSS also provided physical space, electrical hookups, and adequate cooling for the two-rack system in the campus machine room within the basement of Upson II. In a unique partnership between UND and the private sector, the Vice President for Research contracted with Meridian Environmental Technology, Inc., to provide the first year of system administration services for the Computational Research Center, because of this local firm's expertise in setting up and running high performance computing networks.

In preparation for submitting the next NSF EPSCoR Research Infrastructure Improvement grant proposal (due date July 19, 2004; grant effective dates, June 1, 2005, through May 31, 2008; requested amount \$9 million NSF, \$4.5 million North Dakota Cash Match), research initiatives were identified for EPSCoR support at the University of North Dakota. In consultation with The Implementation Group (TIG), a private consulting firm based in Washington, DC, with expertise in the NSF EPSCoR program, established research groups at UND and NDSU were asked to submit white papers for external review. The goal was to identify between one and four statewide research initiatives, targeted for EPSCoR support in 2005-2008. After the external reviews were evaluated by TIG personnel, the Executive Leadership Team, and the Associate Project Directors, four Statewide Research Initiatives were selected for inclusion in the next RII grant proposal:

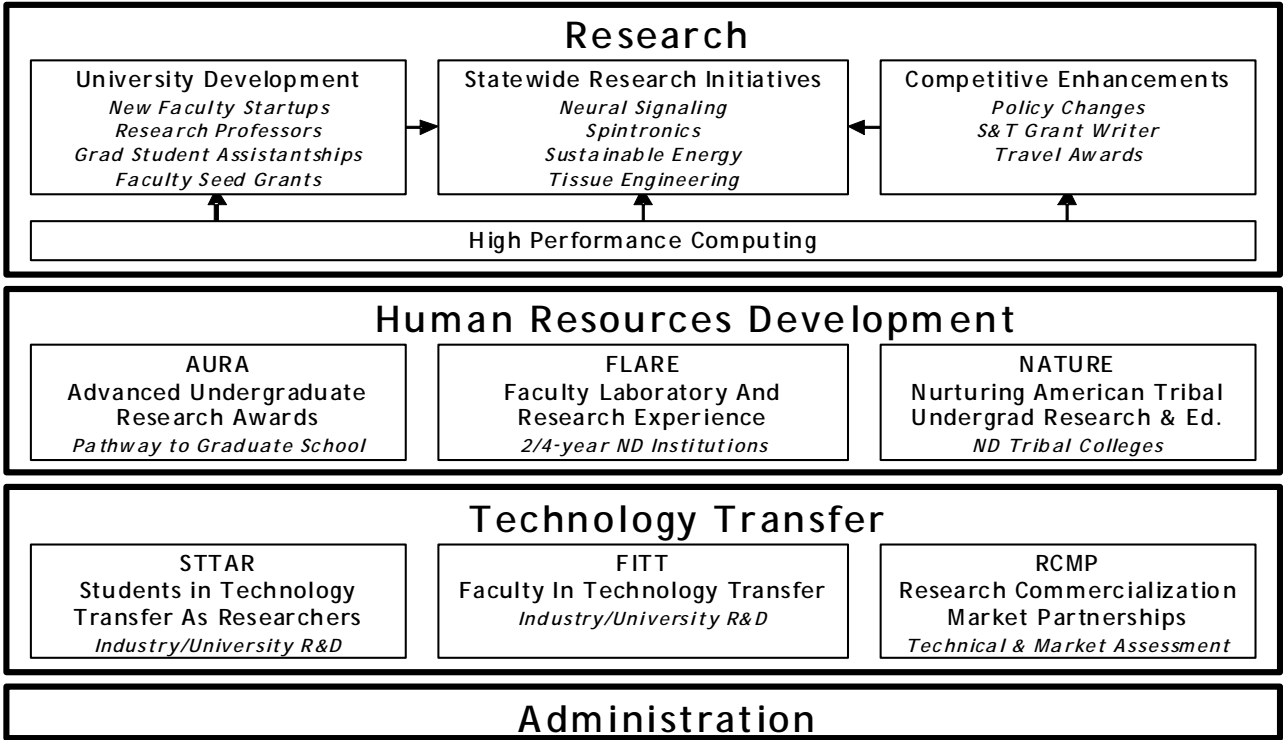
- Neuroscience (based in the UND School of Medicine and Health Sciences and UND Biology)
- Spintronics (based in the NDSU Center for Nanoscale Science and Engineering)
- Sustainable Energy (based in UND Chemical Engineering and UND Chemistry)
- Tissue Engineering (based in NDSU Mechanical Engineering)

These four initiatives became the cornerstone of the next NSF EPSCoR RII grant proposal, with the components and programs shown in Figure 4-2.

ND EPSCoR awards at the University of North Dakota for Fiscal Year 2004 are itemized within the following sections.

Figure 4-2. ND EPSCoR Infrastructure Improvement Programs

1. Infrastructure Improvement Programs



Infrastructure Improvement Programs support New Faculty Startup Awards, IIP SEED, Doctoral Dissertation Awards, Graduate Student Assistantship Awards and Permanent Equipment Acquisitions. Listed below are the awards for this reporting period.

Table 4-1. North Dakota EPSCoR New Faculty Startup Awards: FY 2004

Principal Investigator	Department	Title	Amount
Cavalli, Matthew N.	Mechanical Engineering	New Faculty Startup	\$ 45,000
Delbridge, Ewan E.	Chemistry	New Faculty Startup	55,000
Derenne, Adam P.	Psychology	New Faculty Startup	10,000
Haertel, Patrick T.	Atmospheric Sciences	New Faculty Startup	35,000
Hardersen, Paul S.	Space Studies	New Faculty Startup	50,000
Kolodka, Edward B.	Chemical Engineering	New Faculty Startup	50,000
Mamaghani, Iraj H. P.	Civil Engineering	New Faculty Startup	50,000
Rhen, Turk E.	Biology	New Faculty Startup	55,000
Wu, Min	Biochemistry and Molecular Biology	New Faculty Startup	25,000
TOTAL NORTH DAKOTA EPSCoR NEW FACULTY STARTUP AWARDS			\$375,000

Table 4-2. North Dakota EPSCoR Doctoral Dissertation Awards: FY 2004

Student	Adviser	Department	Amount
Durick, Kelly A.	Bradley, David S.	Microbiology and Immunology	\$ 35,163
Wang, Chao	Ames, Forrest E.	Mechanical Engineering	35,163
Zhou, Anqi	Chen, Tar-Pin	Physics	35,163
TOTAL NORTH DAKOTA EPSCoR DOCTORAL DISSERTATION AWARDS			\$105,489

Table 4-3. North Dakota EPSCoR IIP SEED Awards: FY 2004

Principal Investigator	Department	Title	Amount
Dunlevy, Jane R.	Anatomy and Cell Biology	The Role of BOG 25 in the Nucleus and in Membrane Vesicles	\$ 35,000
Homandberg, Gene A.	Biochemistry and Molecular Biology	Mechanism of Fibronectin Fragment Mediated Cartilage Chondrolysis	37,500
Singh, Brij B.	Biochemistry and Molecular Biology	Regulation of Transient Receptor Potential Protein-1	35,000
Young, Timothy R.	Physics	Improving the Image Quality of Small Telescopes through Super-Resolution Techniques	15,000
TOTAL NORTH DAKOTA EPSCoR IIP SEED AWARDS			\$122,500

Table 4-4. North Dakota EPSCoR Graduate Assistantship Award: FY 2004

Principal Investigator	Adviser	Department	Amount
Edwards, Katherine	Morris, Donna L.	Family and Community Nursing	\$34,087
TOTAL NORTH DAKOTA EPSCoR GRADUATE ASSISTANTSHIP AWARDS			\$34,087

Table 4-5. North Dakota EPSCoR Permanent Equipment Acquisition from Strategic Planning Funds: FY 2004

Equipment	Company	Department	Amount
High Performance Computing Center	Aspen Systems, Inc.	Office of the Vice President for Research	\$139,459
TOTAL NORTH DAKOTA EPSCoR PERMANENT EQUIPMENT ACQUISITIONS			\$139,459

2. Science Outreach And Recruitment (SOAR)

Three Science Outreach And Recruitment programs, namely Advanced Undergraduate Research Awards (AURA), Science Bound, and Faculty Laboratory and Research Experience (FLARE), were supported in Fiscal Year 2004. Ten AURA undergraduates received support from the ND EPSCoR Program to conduct research for an eight-to-ten-week period during the summer of 2004. The student participants in AURA and their faculty mentors are listed in Table 4-6.

Table 4-6. North Dakota EPSCoR AURA Program Awards: FY 2004

Student	Mentor	Department	Amount
Boese, Sarah	Doze, Van A.	Pharmacology, Physiology and Therapeutics	\$ 3,580
Dehen, Christopher	Smoliakova, Irina P.	Chemistry	3,580
Downs, Joel	Young, Timothy R.	Physics	3,580
Frederick, Kaycee	Kucera, Paul A.	Atmospheric Sciences	3,580
Locket, Kyle	Grove, Bryon D.	Anatomy and Cell Biology	3,580
Mehus, Joseph	Vaughan, Jefferson A.	Biology	3,580
Schmidt, Steven	Meberg, Peter J.	Biology	3,580
Slanger, Avram	Rundquist, Bradley C.	Geography	3,580
Stolz, Cheryl	Terrance, Cheryl A.	Psychology	3,580
Tinquist, Erin	Lindseth, Glenda N.	Nursing	3,580
TOTAL NORTH DAKOTA EPSCoR AURA AWARDS			\$35,800

Entering freshman with a strong interest in science, engineering and mathematics can qualify for the EPSCoR Science Bound program which provides support for academic year and summer research activities. Students who maintain a 3.0 GPA and demonstrate progress in their research are eligible for a second-year award. The 14 participants in Fiscal Year 2004 and their faculty mentors are listed in Table 4-7.

Faculty at North Dakota's two- and four-year institutions participate in ND EPSCoR's Faculty Laboratory and Research Experience (FLARE) program, which provides support for summer research in collaboration with a principal investigator at one of the two research universities. Table 4-8 lists the FLARE participant, home institution and the UND faculty host collaborator for Fiscal Year 2004.

Table 4-7. North Dakota EPSCoR Science Bound Awards: FY 2004

Student	Mentor	Department	Amount
Blanchard, Miran	Atkinson, Michael M.	Anatomy and Cell Biology	\$ 5,560
Garman, Gina	Terrance, Cheryl A.	Psychology	5,560
Gruman, Elizabeth	Sheridan, William F.	Biology	5,277
Hofland, Erica	Meberg, Peter J.	Biology	1,697
Johnson, Diana	Vaughan, Roxanne A.	Biochemistry and Molecular Biology	1,697
Keller, Brittany	Lindseth, Glenda N.	Nursing	5,277
Lund, Michael	Grove, Bryon D.	Anatomy and Cell Biology	6,483
Mann, Krysta	Rieke, Garl K.	Anatomy and Cell Biology	5,560
Martin, Erica	Dunlevy, Jane R.	Anatomy and Cell Biology	1,980
Nurnberger, Jeri	Weatherly, Jeffrey N.	Psychology	6,483
Rafferty, Iris	Dunlevy, Jane R.	Anatomy and Cell Biology	1,697
Scott, Katie	Ferraro, F. Richard	Psychology	1,980
Westby, Joanna	Lindseth, Glenda N.	Nursing	5,560
Wolf, Travis	Doze, Van A.	Pharmacology, Physiology and Therapeutics	5,277
TOTAL NORTH DAKOTA EPSCoR SCIENCE BOUND PROGRAM AWARDS			\$60,088

Table 4-8. North Dakota EPSCoR FLARE Award : FY 2004

Visiting Researcher	Home Campus	Faculty Host	Department	Amount
McAllister, James	Dickinson State	Gerla, Philip J.	Geology and Geological Engineering	\$10,834
TOTAL NORTH DAKOTA EPSCoR FLARE PROGRAM AWARD				\$10,834

3. NASA EPSCoR Grants

As a result of a successful proposal to the National Aeronautics and Space Administration (NASA) EPSCoR Program, funds were available to support projects related to areas of interest to NASA. Seed, Collaborative Student Support and Travel grants were awarded to faculty responding to a request for proposals distributed by the NASA EPSCoR Coordinator, Shanaka L. de Silva (Space Studies). The UND faculty receiving awards from this program are listed in Table 4-9.

Table 4-9. North Dakota NASA EPSCoR Awards: FY 2004

Principal Investigator	Department	Title	Amount
Ames, Forrest E.	Mechanical Engineering	Experimental Investigation of Stagnation Region Heat Transfer Over a Range of Strain Rates and Turbulent Time Scales	\$ 6,319
Dong, Xiquan	Atmospheric Sciences	Validation of Ground- and Satellite-Based Cloud Retrievals Using UND's In-Situ Aircraft Measurements	24,551
Grant, Emanuel S.	Computer Science	Establishing Research Facility and Collaboration for Implementing a Rigorous Domain-Specific Software Engineering Environment	5,000
Hardersen, Paul S.	Space Studies	Space Studies Seminar	8,000
Rundquist, Bradley C.	Geography	Changes in Vegetation Dynamics and Conversion of Agricultural Land in Bangladesh, 1973-2004	4,975
Young, Timothy R.	Physics	Searching for Extrasolar Planets Using UND's Small Telescopes	14,359
TOTAL NORTH DAKOTA NASA EPSCoR AWARDS			\$ 63,204

4. EPA EPSCoR Grants

As a result of a successful proposal to the Environmental Protection Agency (EPA) EPSCoR Program, funds were also available to support projects related to areas of interest to the EPA. The EPA EPSCoR Coordinator is Mark R. Hoffmann (Chemistry). The Fiscal Year 2004 award is listed in Table 4-10.

Table 4-10. North Dakota EPA EPSCoR Seed Grant Award: FY 2004

Principal Investigator	Department	Title	Amount
Zhao, Julia Xiaojun	Chemistry	Engineered Nanoparticles for Bioanalysis	\$ 75,000
TOTAL NORTH DAKOTA EPA EPSCoR SEED GRANT AWARD			\$ 75,000

5. NIH Biomedical Research Infrastructure Network (BRIN) Grants

North Dakota BRIN's purpose is to build biomedical research capacity within the state. Networking and human resource development are the watchwords for this collaborative effort between the two North Dakota research universities, four baccalaureate institutions in the North Dakota University System and five tribal community colleges. Table 4-11 lists the three NIH (Biomedical Research Infrastructure Network, BRIN) awards made in Fiscal Year 2004.

Table 4-11. North Dakota NIH Biomedical Research Infrastructure Network (BRIN) Awards: FY 2004

Principal Investigator	Department	Title	Amount
Geiger, Jonathan D.	Pharmacology, Physiology and Therapeutics	New Faculty Startup	\$ 100,000
Wu, Min	Biochemistry and Molecular Biology	New Faculty Startup	105,000
TOTAL NORTH DAKOTA BRIN NEW FACULTY START-UP AWARDS			\$ 205,000

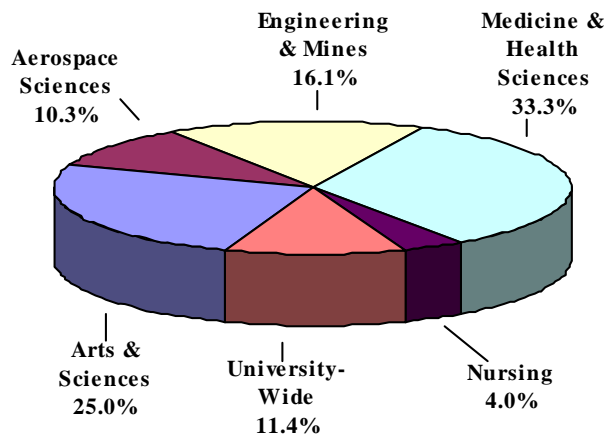
6. North Dakota EPSCoR Awards by University Unit

Table 4-12 and Figure 4-3 show the distribution of North Dakota EPSCoR awards by University unit.

Table 4-12. EPSCoR Awards by University Unit: FY 2004

Unit	Amount
College of Arts and Sciences	\$ 306,974
John D. Odegard School of Aerospace Sciences	126,131
Nursing	48,504
School of Engineering and Mines	197,316
School of Medicine and Health Sciences	408,077
University-Wide High Performance Computing Equipment Acquisition	139,459
TOTALS	\$1,226,461

Figure 4-3. EPSCoR Awards by University Unit: FY 2004



APPENDICES