NORTH DAKOTA STATE UNIVERSITY

SPONSORED PROGRAMS ADMINISTRATION

ANNUAL REPORT

EXTERNAL FUNDING AWARDS – 2003

Introduction

We are pleased to present the FY 2003 Annual Report, prepared by the staff in the Office of Sponsored Programs Administration. This report contains awards made to North Dakota State University by external funding sources as well as grants funded through internal sources. Comparisons are made with previous years in order to highlight changes. We invite you to read this report and experience the success of NDSU!

Breakdown of external awards and federal funds by category:

	FY 2002	FY 2003
External Awards	$41,119,924	$50,417,930
External Unrestricted* Awards	$ 837,423	$ 1,054,113
Total External Awards	*$41,957,347*	*$51,472,043*
Hatch/McIntire-Stennis Funds	$ 2,398,019	$ 2,400,644
NDSU Extension Service Smith-Lever Formula Funds	$ 3,430,090	$ 3,472,172
Student Financial Aid	$ 5,909,752	$ 7,435,232
Total Federal Formula Funds	*$11,737,861*	*$13,308,048*
Grand Total	**$53,695,208**	**$64,780,091**

*Unrestricted awards are awards made to North Dakota State University from outside sources to support research that typically do not have a formal or competitive process or proposal requirement.

NDSU faculty, staff and students achieved a record $51,472,043 in external grants, contracts and cooperative agreements during FY 2003. This record includes a single award from the Department of Defense for $9.5 million, which represents the largest single grant received in NDSU's history. External awards have varied purposes, including support of research, education and public service/extension activities. This level of funding is an increase of 23% over FY 2002. Since FY 1997, NDSU faculty, staff and students have attracted over a quarter of a billion dollars in external support.

The sources of the external awards were federal - 87%, state/local - 3.5%, foundation/non-profit - 2%, business/industry - 1.6%, commodity groups - 3.4% and other - 2.5%.

Thanks to the efforts of our innovative faculty, staff and students, NDSU continues to improve its external funding growth and expand its contributions to economic development in North Dakota. External funding continues to play an important role in enhancing and sustaining institutional capabilities and providing educational opportunities for our students in classroom instruction and research.

The increase of external and internal funding in FY 2003 is credited to North Dakota State University's outstanding leadership, faculty and staff. Congratulations on a very successful year!

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Table of Contents

Introduction……1

Table of Contents……2

Section I: Summaries and Comparisons

NSF Survey of Research and Development Expenditures - FY 1999 through FY 2003……3

Comparison of Budgeted Funds Managed - FY 1999 through FY 2003……4

Summary of Budgeted Funds under Management by College/Unit - FY 2002 versus FY 2003……5

Summary of External Awards - FY 2002 versus FY 2003……6

Comparison of External Awards - FY 1993 through FY 2003……7

Summary of Sources of Funding - FY 2002 versus FY 2003……8

Proposals Processed and Total Dollars Requested from External Funding Sources - FY 2001 through FY 2003……9

Total Dollars Awarded to Colleges and Departments - FY 2002 versus FY 2003……10

Non-Cash Awards……11

Federal Formula Funds and Unrestricted Awards - FY 2003……12

Research Compliance Committees……13

Section II: Internal NDSU Grant Programs

North Dakota EPSCoR at NDSU……14

VPRCATT Funded Projects……18

Research Foundation - Research Development Support Program……19

Research and Consulting Committee Programs - Grant-in-Aid, Travel Awards and Research Resources Awards……19

State Board of Agricultural Research and Education - Agricultural Research Awards……22

Section III: External Grant Detail

College of Agriculture……24

Extension and Experiment Station……24

College of Arts, Humanities, and Social Sciences……46

College of Business Administration……48

College of Engineering and Architecture……48

College of Human Development and Education……51

College of Pharmacy……52

College of Science and Mathematics……54

University Miscellaneous Offices……58

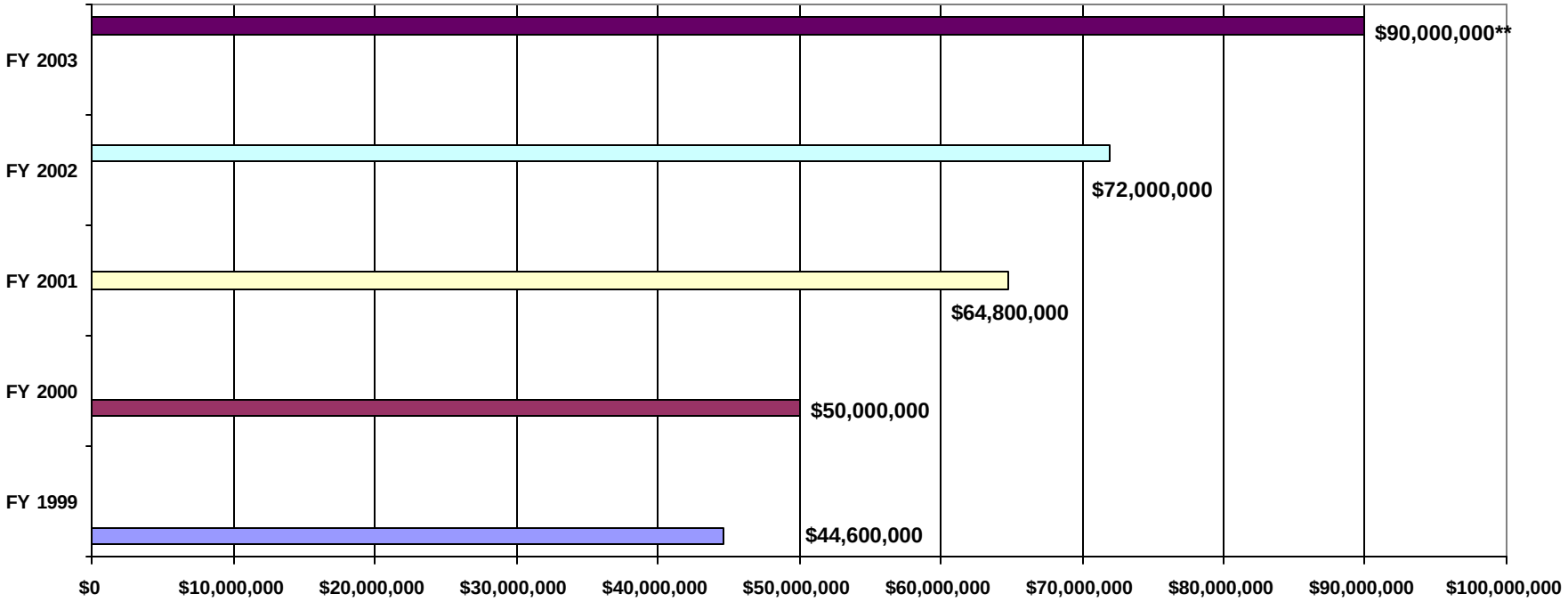
Upper Great Plains Transportation Institute……62

Index of Section III……63

NSF Survey of Research & Development Expenditures*
FY 1999 – FY 2003

Each year, the National Science Foundation requests data from universities and colleges on their respective fiscal year research and development expenditures. The survey is developed and conducted by the NSF Division of Science Resources Statistics (SRS) and fulfills the legislative mandate of the National Science Foundation Act to "provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources". The SRS develops and directs about 14 surveys and annually produces about 30 publications related to resources devoted to science, engineering, and technology. The surveys contribute to decisions affecting higher education, Congress, the executive branch, and education associations using institutional data.

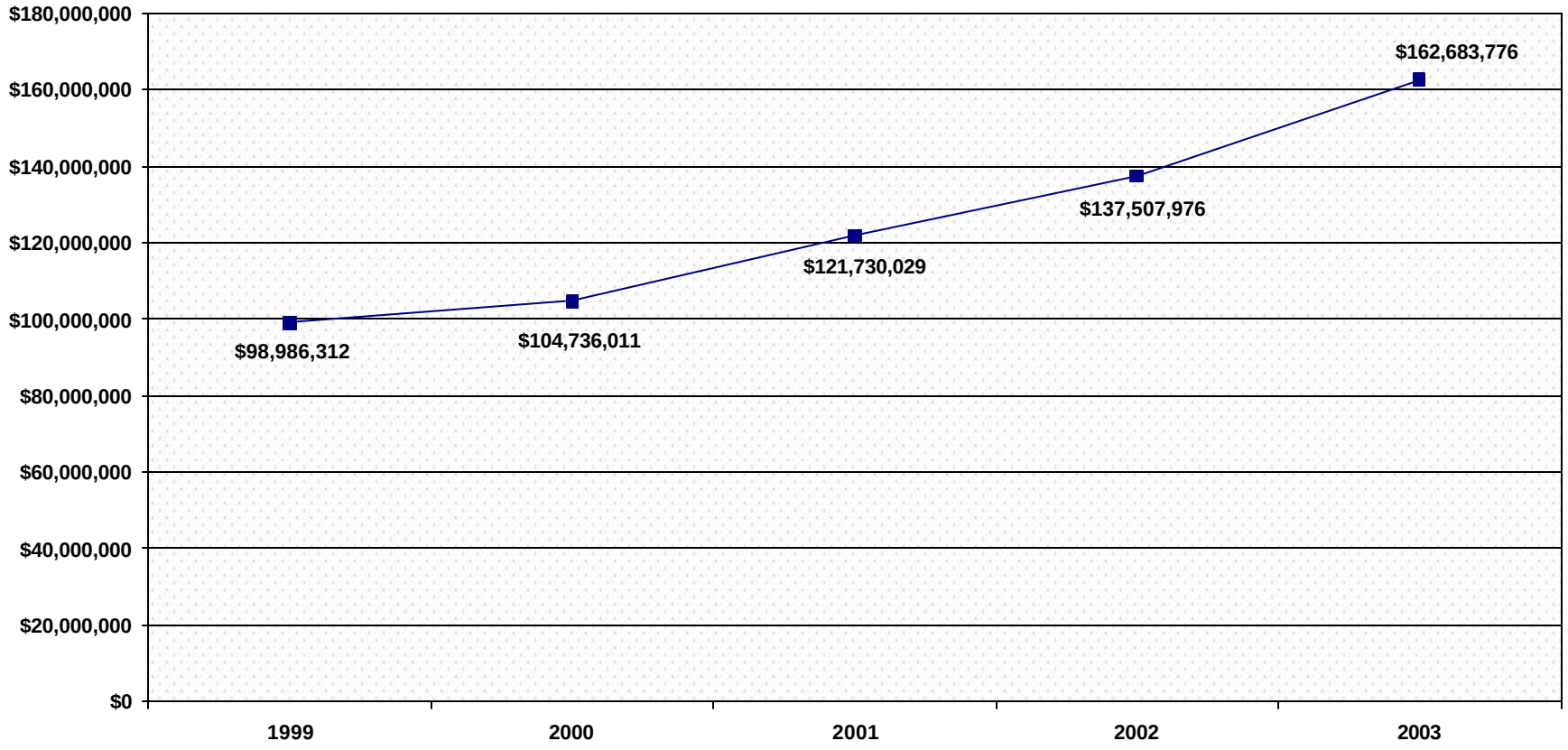
The data represented below is generated from funding awarded to NDSU. Sources of funding include: Federal government, State and local government, industry, institution, and other sources such as non profit foundations. Institutional funds include state appropriations, tuition and fees, and gifts expended for research and development activities. In addition, un-reimbursed indirect costs and cost sharing are included as part of the institutional data. NDSU has been doing exceedingly well as sponsored program funding has increased over the last few years.



*New report added in FY 2003.
**FY 2003 represents a projection and is not yet finalized.

Comparison of Budgeted Funds Managed*
FY 1999 - FY 2003

Budgeted funds under management includes all awards managed by Restricted Fund Accounting. Federal formula funds and state appropriated dollars are not included. Dollars listed below represent combined total by fiscal year of all college/units funds that were actively managed by Restricted Fund Accounting. Comparisons are made by fiscal year.



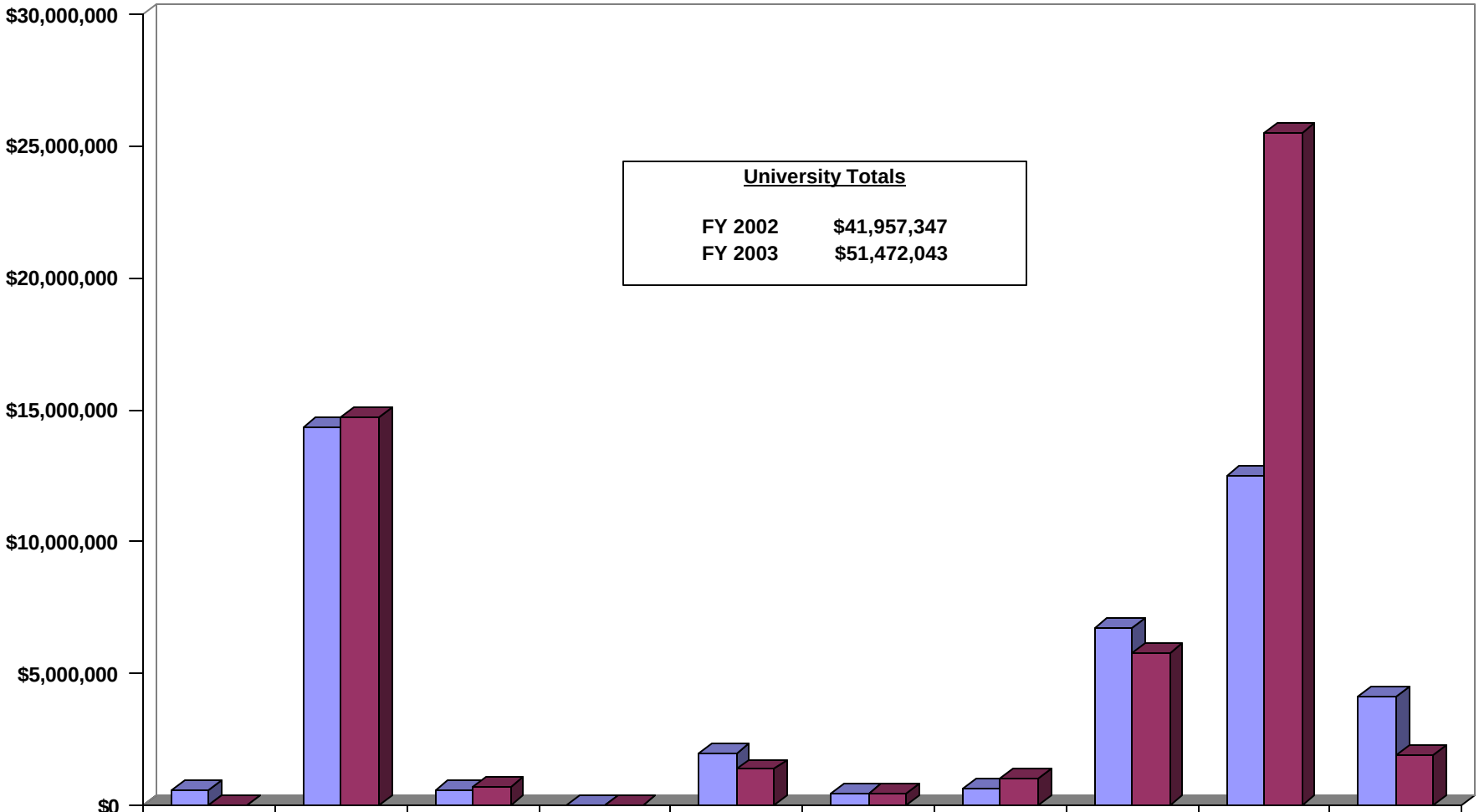
*New report added in FY 2003.

Summary of Budgeted Funds under Management by College/Unit*
FY 2002 versus FY 2003

	FY 2002			FY 2003		
College/Unit	Budget	Expenses	Balance	Budget	Expenses	Balance
Agriculture	653,592	351,070	302,522	532,650	380,178	152,472
Extension and Experiment Station	19,279,082	14,784,899	4,494,183	21,611,402	16,981,970	4,629,432
Arts, Humanities & Social Sciences	1,585,219	864,805	720,414	2,695,677	1,618,726	1,076,951
Business Administration	0	0	0	20,000	20,000	0
Engineering and Architecture	4,624,139	2,622,218	2,001,921	4,927,188	3,298,910	1,621,888
Human Development & Education	1,937,590	1,363,776	573,814	1,974,006	1,580,903	393,103
Pharmacy	5,504,712	3,994,905	1,509,807	6,811,268	5,274,701	1,536,567
Science and Mathematics	26,435,209	17,322,735	9,112,474	27,860,742	20,220,631	7,640,111
University Miscellaneous Offices	66,535,462	41,446,705	25,088,757	83,969,266	54,901,757	29,067,509
Upper Great Plains Transp. Institute	10,952,971	7,647,216	3,305,755	12,281,577	10,532,554	1,749,023
TOTALS	**137,507,976**	**90,398,329**	**47,109,647**	**162,683,776**	**114,810,330**	**47,867,056**

*New report added in FY 2003.

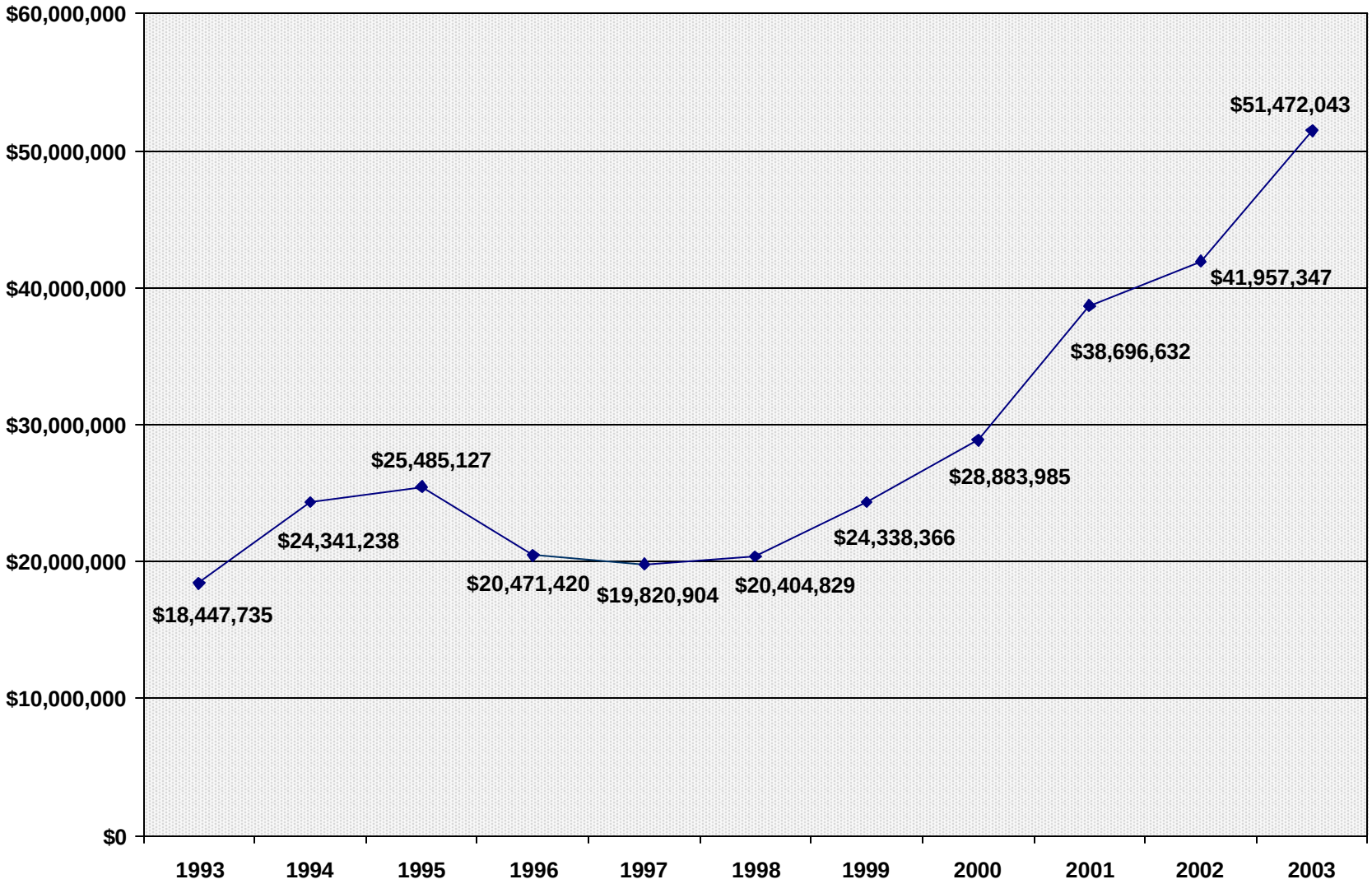
Summary of External Awards*
FY 2002 versus FY 2003



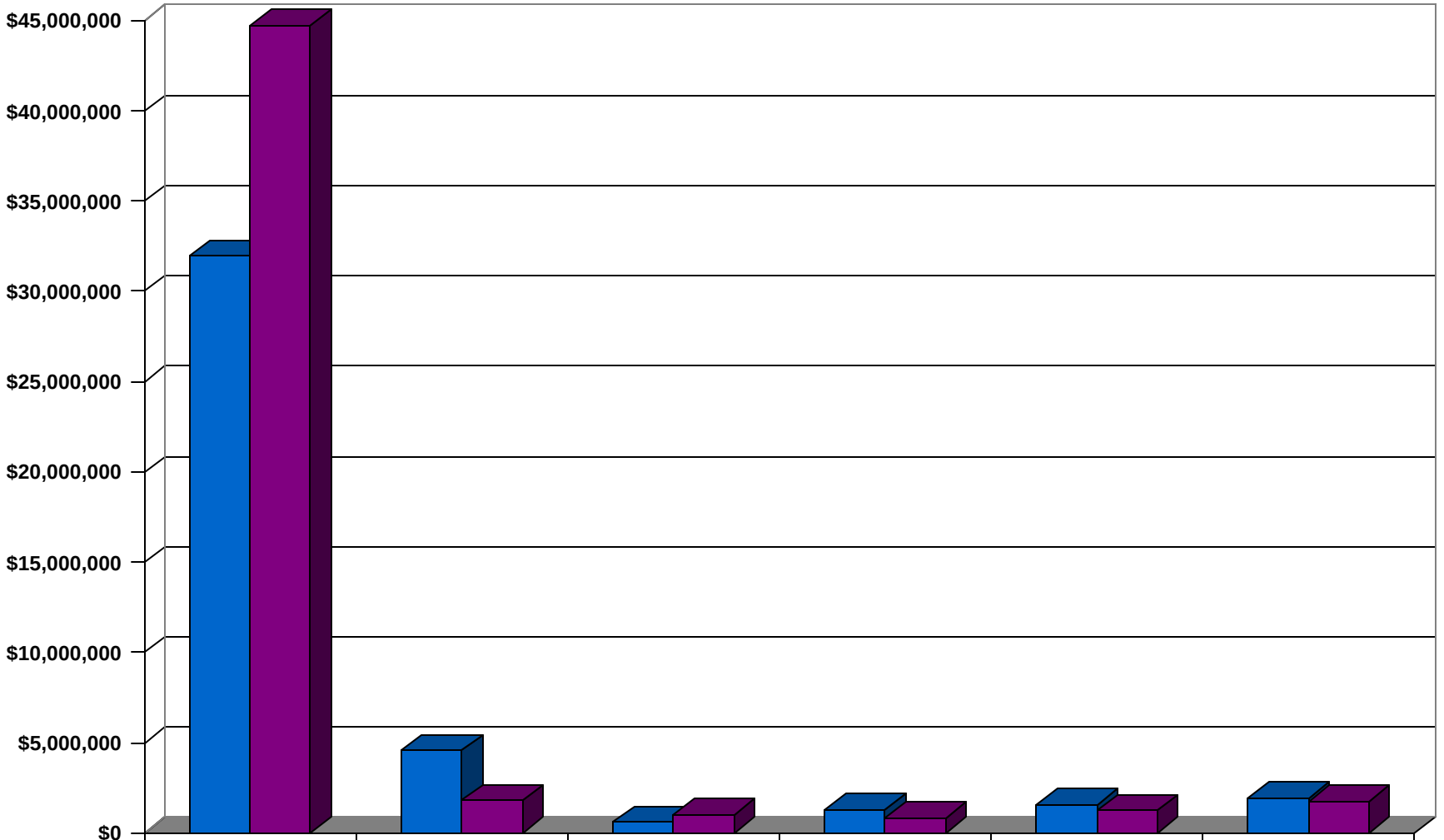
	Agriculture	Extension & Experiment Station	Arts, Humanities and Social Sciences	Business Administration	Engineering and Architecture	Human Development and Education	Pharmacy	Science and Mathematics	University Miscellaneous Offices	Upper Great Plains Trans. Institute
FY 2002	$565,502	$14,314,590	$589,331	$0	$1,995,691	$480,913	$652,680	$6,709,980	$12,528,585	$4,120,075
FY 2003	$13,706	$14,743,926	$693,415	$20,000	$1,375,491	$440,983	$1,013,310	$5,757,888	$25,521,324	$1,892,000

*FY 2003 totals include college/unit totals and all unrestricted awards.

Comparison of External Awards
FY 1993 - FY 2003



Summary of Sources of Funding
FY 2002 versus FY 2003



	Federal	State/Local	Foundation/Non-Profit	Business/Industry	Other	Commodity	Totals
FY 2002	$31,967,490	$4,568,852	$625,805	$1,311,638	$1,557,494	$1,926,068	$41,957,347
FY 2003	$44,722,743	$1,800,127	$1,048,055	$855,711	$1,269,090	$1,776,317	$51,472,043

Proposals Processed through Sponsored Programs Administration and Total Dollars Requested from External Funding Sources FY 2001 - FY 2003

	FY 2001		FY 2002		FY 2003	
College/Unit*	**# Proposals**	**Requested**	**# Proposals**	**Requested**	**# Proposals**	**Requested**
Agriculture	4	2,882,014	17	4,041,877	28	2,805,061
Extension & Experiment Station	357	46,285,955	384	28,697,555	439	50,221,840
Arts, Humanities & Social Sciences	26	4,475,566	21	714,568	28	9,646,813
Business Administration	4	64,057	2	238,296	4	273,636
Engineering & Architecture	68	5,372,543	69	8,493,322	101	20,534,836
Human Development & Education	35	4,366,099	12	941,340	20	1,717,753
Pharmacy	33	11,892,481	25	7,260,600	41	13,354,523
Science & Mathematics	102	31,734,942	90	39,221,002	129	96,998,185
University Miscellaneous Offices	21	5,919,351	36	32,303,119	53	33,977,935
Upper Great Plains Trans. Institute	28	5,851,572	17	3,211,174	26	15,898,983
TOTAL	**678**	**118,844,580**	**673**	**125,122,853**	**869**	**245,429,565**

*College/unit categories are determined by the principal investigator's department; co-investigators are not reflected.

Total Dollars Awarded to Colleges and Departments FY 2002 versus FY 2003

College of Agriculture, Food Systems and Natural Resources	FY 2002	FY 2003
Agribusiness & Applied Economics	560,787	0
Animal & Range Sciences	0	13,706
Plant Sciences	4,715	0
	565,502	**13,706**

Extension and Experiment Station	FY 2002	FY 2003
Agribusiness & Applied Economics	1,048,382	1,176,412
Agricultural Administration	762,601	1,069,349
Agricultural & Biosystems Engineering	435,563	567,403
Agricultural Communications	0	5,100
Animal & Range Sciences	788,855	989,288
Biochemistry & Molecular Biology	267,314	0
Carrington Research Extension Center	157,998	445,528
Center for 4-H Youth Development	28,000	84,380
Cereal & Food Sciences	758,328	459,466
Child Development & Family Sciences	0	156,315
Dickinson Research Extension Center	145,779	157,602
Entomology	445,675	595,995
Extension Administration	507,852	450,382
Extension County Programs	0	100,148
Extension – Off Campus	26,772	16,295
Health, Nutrition & Exercise Sciences	1,468,724	1,607,516
Hettinger Research Extension Center	187,296	130,510
Langdon Research Extension Center	187,345	62,104
North Central Research Extension Center	320,743	307,901
Northern Crops Institute	98,122	183,202
Plant Pathology	1,475,375	1,465,752
Plant Sciences	3,514,410	3,409,683
Soil Sciences	472,852	535,605
Veterinary Diagnostic Services	33,745	391,022
Veterinary & Microbiological Sciences	1,167,519	110,818
Williston Research Extension Center	15,340	266,150
TOTAL	**14,314,590**	**14,743,926**

College of Arts, Humanities, & Social Sciences	FY 2002	FY 2003
Communication	64,414	52,500
Dean's Office	11,495	0
Division of Fine Arts	4,960	0
English	0	5,000
History/Religious Studies	85,905	10,751
Sociology/Anthropology	422,557	625,164
TOTAL	**589,331**	**693,415**

College of Business Administration	FY 2002	FY 2003
Business Administration	0	20,000
TOTAL	**0**	**20,000**

College of Engineering and Architecture	FY 2002	FY 2003
Architecture & Landscape Architecture	59,076	66,688
Civil Engineering & Construction	693,756	213,415
Electrical & Computer Engineering	534,614	111,829
Industrial & Manufacturing Engineering	237,024	105,730
Mechanical Engineering & Applied Mechanics	211,221	637,829
Transportation Technology Transfer Center	260,000	240,000
TOTAL	**1,995,691**	**1,375,491**

College of Human Development & Education	FY 2002	FY 2003
Child Development & Family Science	319,755	236,769
Education	76,730	121,572
Health, Nutrition & Exercise Sciences	84,428	82,642
TOTAL	**480,913**	**440,983**

College of Pharmacy	FY 2002	FY 2003
Dean's Office	241,113	798,810
Pharmaceutical Sciences	369,317	211,500
Pharmacy Practice	42,250	3,000
TOTAL	**652,680**	**1,013,310**

College of Science and Mathematics	FY 2002	FY 2003
Biological Sciences	683,703	686,351
Center for Science & Mathematics	104,417	168,052
Chemistry	3,064,817	2,168,531
Computer Science	1,296,420	0
Geosciences	86,514	100,692
Mathematics	1,002,745	439,154
Physics	53,555	324,947
Polymers & Coatings	95,919	1,173,074
Psychology	321,890	692,087
Statistics	0	5,000
TOTAL	**6,709,980**	**5,757,888**

University Miscellaneous Offices	FY 2002	FY 2003
ND EPSCoR Office	2,006,839	3,055,057
Office of the President/Athletics	0	4,000
Office of the President/ND Forest Service	2,172,108	2,306,121
VP Academic Affairs Office	150,000	0
VP Academic Affairs/ITS	1,623,669	27,907
VP Academic Affairs/Library Administration	5,000	0
VP Agricultural Affairs/IBID	75,000	257,976
VP Business & Finance/Physical Plant	296,348	0
VP Business & Finance/NDSU Police Department	1,224	0
VP Research, Creative Activities & Tech Transfer	5,030,089	1,520,163
VP RCATT/CATTT	0	350,000
VP RCATT/CNSE	0	16,712,624
VP RCATT/ND Water Resources Research Inst.	84,785	118,431
VP Student Affairs/Career Center	3,872	0
VP Student Affairs/Student Health Service	0	37,833
VP Student Affairs/TRIO Programs	1,079,651	1,131,212
TOTAL	**12,528,585**	**25,521,324**

Upper Great Plains Transportation Institute	FY 2002	FY 2003
Upper Great Plains Transportation Institute	4,120,075	1,892,000
TOTAL	**4,120,075**	**1,892,000**

University Total	**41,957,347**	**51,472,043**

***Totals include Unrestricted Awards**

Non-Cash Awards

PI/Department	Ingrid Scarski, Construction Management & Engineering
Agency	Management Computer Controls, Inc.
Nature of Award	WinScale Ver 5.20/WinExPro Ver 4.12 Bundle; WSC/WX Pro Bundle Tech Support
Value	$22,830
PI/Department	Ingrid Scarski, Construction Management & Engineering
Agency	Management Computer Controls, Inc.
Nature of Award	General Contractor Module, Construction Manager Module
Value	$83,990

Federal Formula Funds
Fiscal Year 2003

As a land-grant institution, NDSU receives federal allocations from the Hatch, McIntire-Stennis, and Smith-Lever programs. The Pell Grant is an entitlement. The College Work/Study Program and the Supplemental Education Opportunity Grant (SEOG) are allocated according to a "fair-share formula" based on student need. In fiscal year 2003, NDSU received $13,308,048 in federal "formula funds" as detailed below:

Federal Formula Source	Amount
College of Agriculture/Experiment Station	
Hatch Act – Regular	$1,691,279
Hatch Multi-State Fund	590,514
McIntire-Stennis	118,851
Total	**$2,400,644**
NDSU Extension Service	
Smith Lever-Formula Funds	**$3,472,172**
Student Financial Aids	
Pell Grant	$6,229,150
College Work/Study	563,709
SEOG	642,373
Total	**$7,435,232**
Total Federal Formula Funds	**$13,308,048**

Unrestricted Awards by Department
Fiscal Year 2003

Unrestricted awards are awards made to North Dakota State University from outside sources to support research that typically does not have a formal or competitive process or proposal requirement. In fiscal year 2003, NDSU received $1,054,113 in unrestricted awards as detailed below:

Department	Amount
Agribusiness and Applied Economics	$ 15,600
Agricultural and Biosystems Engineering	1,225
Animal & Range Sciences	20,000
Carrington Research Extension Center	1,650
Cereal and Food Sciences	53,550
Dickinson Research Extension Center	2,800
Entomology	61,143
Extension Administration	17,000
Extension County Programs	170
Hettinger Research Extension Center	6,850
Langdon Research Center	9,500
North Central Research Extension Center	22,150
Northern Crops Institute	183,202
Plant Pathology	227,275
Plant Sciences	368,876
Soil Sciences	56,472
Williston Research Extension Center	6,650
Total Unrestricted Awards	**$1,054,113**

Research Compliance Committees

As an institution receiving federal funds for research, North Dakota State University is subject to federal regulations and funding agency requirements concerning projects that involve **human subjects**, **animals**, or **bio-hazardous materials**. The Office of Sponsored Programs Administration, within the Office of the Vice President for Research, Creative Activities and Technology Transfer is responsible for ensuring institutional compliance with these requirements, and administration of the associated oversight committees.

Research Involving Human Subjects

In accordance with North Dakota State University policy governing the use of human subjects (participants) in research, as described in the Federal-Wide Assurance maintained with the U.S. Department of Health and Human Services, Office of Human Research Protections; all human subjects research conducted by or under the auspices of NDSU is to be performed in accordance with Title 45 of the Code of Federal Regulations, Part 46, *Protection of Human Subjects*, as well as all applicable federal, state, and local laws and regulations. The Institutional Review Board (IRB) is charged with the prospective review and approval of all human subject research projects to be conducted by NDSU faculty, staff, students, or sponsored by the university.

In fulfillment of institutional assurance requirements, educational sessions on human subject protections were initiated campus-wide for all investigators performing human subjects research. The committee convened monthly and the following activity took place during FY 2003:

- 148 projects were administratively certified as 'exempt'
- 24 projects were reviewed by the expedited method
- 24 projects reviewed at convened meetings
- 34 on-going projects received continuing review

Projects Involving Animals

In accordance with North Dakota State University policy governing the use of animals in research, teaching, testing or exhibition, as described in the assurance maintained with the Public Health Service (PHS), Office of Laboratory Animal Welfare (OLAW), all proposed uses of live vertebrate animals conducted by any representative of the University, regardless of location, is to be conducted in accordance with all applicable federal, state, and local laws and regulations. Oversight of the care and use of animals is the responsibility of the Institutional Animal Care and Use Committee (IACUC).

In fulfillment of institutional assurance requirements, educational sessions on animal care and associated regulations were initiated campus-wide for all NDSU faculty, staff, or students using animals for any purpose. The committee convened monthly and the following activity took place during FY 2003:

- 44 new protocols (39 pain category "A", 4 category "B", and 1 category "C")
- 4 Standard Operating Procedures were filed and approved
- 19 changes to an existing protocol
- 91 on-going protocols

Projects Involving Recombinant DNA, Infectious Agents, or Human Blood, Bodily fluids and Tissues

In accordance with North Dakota State University policy governing the use of recombinant DNA, infectious agents, and human blood and tissues, all such research and teaching projects are to be conducted in accordance with biosafety principles and practices as outlined in the National Institutes of Health (NIH) *Guidelines for Research Involving Recombinant DNA Molecules*, or the Center for Disease Control (CDC) publication, *Biosafety in Microbiological and Biomedical Laboratories*, 4th Edition. Oversight, review and approval of all such projects is the responsibility of the Institutional Biosafety Committee (IBC).

Online educational sessions on safe handling of infectious agents and recombinant DNA were made available. The committee convened quarterly and reviewed the following during FY 2003:

- 14 new protocols for the use of rDNA
- 7 protocols for the use of infectious agents
- 1 protocol for the use of human blood
- 69 projects are currently active

More information, guidelines, and protocol forms can be found on the following Sponsored Programs websites:

http://www.ndsu.nodak.edu/research/compliance/iacuc
http://www.ndsu.nodak.edu/research/compliance/irb
http://www.ndsu.nodak.edu/research/compliance/ibc

North Dakota EPSCoR at NDSU

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

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

ND EPSCoR is administered for the North Dakota University System (NDUS) by a steering committee composed of NDSU and UND faculty. NSF funded a major EPSCoR Cooperative Agreement grant in May of 2002. This grant, in the amount of $6.0 million, provides support for research, human resource development, and technology transfer over a three-year period. The North Dakota Legislature has appropriated $5.125 million as matching dollars for the ND EPSCoR Program in 2003. Funds are distributed through a number of competitive processes that support New Faculty Startup Awards, Graduate Assistantships, Equipment and Seed Awards, Undergraduate Research Awards and Technology Transfer. ND EPSCoR also provides similar opportunities through its EPA, NASA and NIH programs.

Infrastructure Improvement Programs

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

New Faculty Start-up Awards

Principal Investigator	Department	Amount of Award
Huirong Fu	Computer Science	$40,000
Robert Gordon	Psychology	$30,000
Qun Huo	Polymers and Coatings	$40,000
Rajesh Kavasseri	Electrical and Computer Engineering	$45,000
Linda Langley	Psychology	$30,000
Wendy Reed	Biological Sciences	$40,000
Mark Schroeder	Electrical and Computer Engineering	$45,000
Dean Webster	Polymers and Coatings	$40,000

Doctoral Dissertation Awards

Student	Faculty Advisor	Department	Amount of Award
Feirong Kang	Jagdish Singh	Pharmaceutical Sciences	$26,240
Shankar Manyem	Mukund Sibi	Chemistry	$17,163
Mohamed I. Matar	Dinesh R. Katti	Civil Engineering and Construction	$31,088
Brian P. Meier	Michael Robinson	Psychology	$29,876
Nicole Very	Mark Sheridan	Biological Sciences	$31,088

Graduate Assistantship Awards

Student	Faculty Advisor	Department	Amount of Award
Anthony Stamness	Gordon Bierwagen	Polymers and Coatings	$33,512

IIP SEED

Principal Investigator/Department	Project Title	Amount of Award
Nikita Barabanov, Mathematics	Stability and H-Infinity Control Problems for Systems with Delays	$12,000
Madhusudan Bhandary, Mathematics	Estimation of Number of Signals in Decentralized Processing Under Colored Noise and Robust Estimation of Number of Signals Under White Noise	$12,000
Alan R. Denton, Physics	Computational Studies of Macromolecular Systems	$15,000
Stephen P. Foster, Entomology	Enzyme Regulation in Pheromone Biosynetheses in Moths	$30,000
Anna T. Grazul-Bilska, Animal and Range Sciences	Role of Angiogenic Growth Factors and Gap Junctions in Healing Wounds	$30,000
Ron Hutchison, Biological Sciences	Site Directed Spin Laveling of the Extrinsic Proteins of Photosystem II	$40,000
Rajendra Katti, Electrical Engineering	New Cryptographic Hardware for Network Security Applications	$15,000
Stephen T. O'Rourke, Pharmaceutical Sciences	Melatonin and NO-signaling in Vascular Smooth Muscle	$37,500
Wayne Reitz, Mechanical Engineering and Applied Mechanics	Understanding the Effect of Cryoquenching on Material Performance	$37,500
Subbaraya Yuvarajan, Electrical and Computer Engineering	A Novel Approach to Photo-voltaic Power Conversion	$12,000

Equipment Grants

Principal Investigator/Department	Project Title	Amount of Award
Canan Bilen-Green, Industrial and Manufacturing Engineering	Optical Sensing Instrumentation for Designing and Monitoring Reliable Products and Processes	$100,000
Gary Brewer, Entomology	Arthropod Digital Imaging and Analysis	$ 56,402
Thomas Freeman, Plant Pathology	Acquisition of Confocal Light Microscopy System to Meet Demonstrated Needs on the NDSU Campus	$ 99,808
Qun Huo, Polymers & Coatings	Purchasing of a Fluorescence Spectrometer System	$ 27,881
Craig Stockwell, Biological Sciences	Automated Sequencing Analysis Facility, ND EPSCoR Infrastructure Improvement Program (IIP)	$ 80,644
Wenfang Sun, Chemistry	Acquisition of a Laser Flash Photolysis Spectrometer System for Organic Materials Research and Education	$100,000

Science Outreach and Recruitment

Three Science Outreach and Recruitment programs, **Advanced Undergraduate Research Awards (AURA)**, **Science Bound**, and **Faculty Laboratory and Research Experience (FLARE)**, were supported in Fiscal Year 2003.

Aura Program Awards

Ten AURA awards, totaling $30,419.55, were made to undergraduates to conduct research for an eight to ten week period during the summer of 2002.

Student	Faculty Mentor	Department
Amy Werremeyer	Steven O'Rourke	Pharmaceutical Sciences
Matthew Webb	Inder Sehgal	Pharmaceutical Sciences
Kimberly Petry	Anna Grazul-Bilska	Animal and Range Sciences
Karla Radke	Seth Rasmussen	Chemistry

Ryan Froelich	John Wagner	Pharmaceutical Sciences
Jessica Havelka	Anne Hinderliter	Pharmaceutical Sciences
Erin Nyren-Erickson	Robert Sparks	Biochemistry and Molecular Biology
Monica Harty	Ron Hutchison	Biological Sciences
Nathan Silvernail	Kenton Rodgers	Chemistry
Sandra Hagen	Mukund Sibi	Chemistry

Science Bound Program Participants

Entering freshmen with strong interests in science, engineering, and mathematics can qualify for the ND 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 participants and their faculty mentors are listed below, for awards totaling $31,491.57.

Student	Faculty Mentor	Department
Joan Beckman	Larry Reynolds	Animal and Range Sciences
Laura Dignan	Mark Sheridan	Biological Sciences
Jessica Goreham	Gregory Cook	Chemistry
Brandon Gustafson	Gregory Cook	Chemistry
Xiao Jia	Sanku Mallik	Chemistry
Jessica Hurdelbrink	Paul Rokke	Psychology
John Totenhagen	Dan Ewert	Electrical and Computer Engineering
Jason Odegaard	Charlene Wolf-Hall	Veterinary and Microbiological Sciences
Amy Uthus	Paul Rokke	Psychology
Elizabeth Bruins	Dwain Meyer	Plant Sciences
Karen Preskey	Mukund Sibi	Chemistry
Nicole Cariveau	Stefan Balaz	Pharmaceutical Sciences
Deanna Boucher	Jagdish Singh	Pharmaceutical Sciences
Kelcee Hanna	Lawrence Reynolds	Animal and Range Sciences
Natalie Eraas	Stefan Balaz	Pharmaceutical Sciences
Adam Sathre	Wayne Reitz	Mechanical Engineering and Applied Mechanics

STTAR

ND EPSCoR established the Students in Technology Transfer and Research (STTAR) Program in 1994 in response to recognized state and national needs for improving technology transfer. ND EPSCoR provides salary cost sharing with participating companies. Sixty North Dakota companies from across the state have participated since the program was initiated. In FY 2003, 21 students from the North Dakota University System and the following companies benefited from student expertise:

Denet Labs, LLC	IBID	Ideal Aerosmith
Leading Technology Designs, Inc.	Nelco, Inc.	Neustel Law Offices, LTD.
NoDak Electric Coop.	Odegaard Aviation, Inc.	PS Doors
Sheyenne Tooling & Manufacturing	Sioux Manufacturing	Turtle Mountain Corporation
CEO Praxis, Inc.	Goodrich Corp.	Phoenix International
Smurfit-Stone Container Corp.		

NASA EPSCoR Grants

The National Aeronautics and Space Administration (NASA) encourages research relevant to the nation's space and advanced aeronautics goals. To accomplish this, NASA initiated an EPSCoR program based on NSF's successful program.

Principal Investigator/Department	Project Title	Amount of Award
Daniel Ewert, Electrical and Computer Engineering	Myocardial Viscoelastic Properties Estimated from an Ejecting Beat: A Possible Tool for Relating Cellular-Level Function to Overall Cardiac Performance in Microgravity	$ 9,000
Victoria Johnston Gelling, Polymers & Coatings	An Investigation into Possible Galvanic Corrosion of the Space Shuttle Columbia	$ 5,000
Wayne Reitz, Mechanical Engineering	Understand Material Properties of Cryoquenched Sheets in High Temperature Applications	$ 2,750
Wayne Reitz, Mechanical Engineering & Applied Mechanics	Student Research on NASA Cryoquenched Material Science Project	$ 6,400
James J. Stone, Mechanical Engineering & Applied Mechanics	Research & Development of the Rapid-Prototyping System for Manufacturing of Fiber-Reinforced Composites	$20,000
Wenfang Sun, Chemistry	Application for Travel Award to 48th SPIE Annual Conference	$ 1,500
Shing-Chung Wong, Mechanical Engineering & Applied Mechanics	Modeling of Nanoscale Graphene-Reinforced Polymers and its Effect on Radiation Shielding	$25,890

EPA EPSCoR Grants

Similarly, the Environmental Protection Agency (EPA) EPSCoR program provides funding for science and engineering research (SEER) projects related to the EPA mission and infrastructure improvement.

Principal Investigator/Department	Project Title	Amount of Award
Mark E. Clark, Biological Sciences	New Faculty Startup Award	$40,000
Eakalak Kahn, Civil Engineering	New Faculty Startup Award	$50,000
Dean Webster, Polymers and Coatings	New Faculty Startup Award	$40,000
Craig Stockwell, Biological Sciences	Equipment Award	$11,924

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.

Principal Investigator/Department	Project Title	Amount of Award
Penelope Gibbs, Veterinary & Microbiological Sciences	New Faculty Startup Award	$95,000
Anne Hinderliter, Pharmaceutical Sciences	New Faculty Startup Award	$50,000
Margaret Khaitsa, Veterinary & Microbiological Sciences	New Faculty Startup Award	$95,000
Clayton Neighbors, Psychology	New Faculty Startup Award	$25,000

VPRCATT Funded Projects*

The Vice President for Research, Creative Activities, and Technology Transfer has funded a variety of initiatives over the past year, with awards totaling $230,500. Funding has included projects such as $100,000 for graduate stipends; support of the WWII Veteran's History Project for $15,000; support of the Strategic Transportation Analysis Project at $62,500; and $10,000 in start-up funding for the Agricultural History Journal.

Principal Investigator/Department	Project Title	Amount of Award
Kara Wolfe	Start-Up Funds for New Faculty Lab	$ 2,000
Thomas Glass	Cooperative Sponsorship Committee (Visiting Faculty Seminars, Presentations and Events for the University Community)	$ 5,000
Ann Burnett	Communication Survey Research (Focus Groups) with Three Doctoral Students	$ 240
Eunice Johnston and David Martin	Recording and Transcription of the Oral Histories of World War II Veterans	$ 15,000
Kevin Brooks	Support for Red River International Conference on World Literature	$ 2,000
Sandra Holbrook	Support for Women's Week Programming	$ 150
Ineke Justitz	Translation of Article from English to German for Publication	$ 800
Stuart Croll	Travel Funds to meet with Industrial Collaborators	$ 945
Victoria-Johnston Gelling	Travel Funds to meet with Industrial Collaborators	$ 945
Wendy Gordon	Seed Money for Research	$ 500
Christine Malone	Seed Money for Research	$ 500
James Council	Support for Red River Psychology Conference	$ 500
Catherine Logue	Support for Hot Zone Event	$ 250
Peg Furshong	2002-2003 NDSU Juried Student Art Exhibition Sponsorship	$ 150
Staff Senate Development Committee	Staff Development Training Fund	$ 140
College of Business Administration	Support for Subscription to CRSP Database	$ 3, 880
Claire Strom	Start-Up Funding for Agricultural History Journal	$ 10,000
Upper Great Plains Transportation Institute	Support for Strategic Transportation Analysis Project	$ 62,500
George Youngs and Robert Wood	Terrorism Survey	$ 4,000
Graduate School	Graduate Fellowships	$100,000
David Hamilton and Wenfang Sun	Start-Up Funds	$ 21,000
	Total	**$230,500**

*New chart added in FY 2003.

Research Foundation

Research Development Support Program

Since fiscal year 1998, the NDSU Research Foundation has sponsored an annual small grant program for support of research projects proposed by NDSU faculty. The program is funded by revenue received from research fees and royalties on intellectual property managed by the Research Foundation. The Foundation Board initiated the Research Development Support Program to help stimulate additional scholarly activity by NDSU faculty.

Research proposals were accepted under two categories for the fiscal year 2003 competition. The **Innovation Awards** category is for research and development projects which anticipate future patent or copyright activity and have commercial potential. The **Investment Awards** category is for preliminary research projects which are likely to lead to larger grants from outside sources in the future. Thirty-six proposals were submitted, resulting in five awarded grants, for a total of $50,000. The five awards, all in the Investment category, are listed below.

Researcher(s)	Department	Project Title	Grant Amount
Cai, Xiwen	Plant Sciences	Manipulation and Identification of Alien Chromatin for Enhancing Resistance to Fusarium Head Blight in Common Wheat and Durum Wheat	$10,000
Mergoum, Mohamed	Plant Sciences	Factors Affecting Gene Flow Through Pollen Drift in Spring Wheat	$10,000
Musiba, Charles	Sociology-Anthropology	3-D Morphometric Study of Hominoid Craniodental Remains from Laetoli Pliocene Site in Northern Tanzania	$10,000
Rhee, Yeong Brunt, Ardith	Health, Nutrition, & Exercise Sciences	Effects of Flaxseed Supplementation on Reducing Risk of Diabetes in Individuals with Impaired Glucose Tolerance	$10,000
Stewart, Mary	Biological Sciences	Signaling in Cell Growth	$10,000

Research and Consulting Committee

The NDSU Research Development Fund was established in 1991 to support, enhance, and reward scholarly activities at NDSU. Funded through indirect costs (facilities and administrative costs) reimbursement from grants and appropriated dollars, the Fund is allocated to the Sponsored Programs Administration Office for disbursement through internal competitive programs developed by the Research and Consulting Committee (RCC). These programs, intended to enhance research infrastructure and encourage more research at NDSU, include the **Grant-in-Aid Program**, **Travel Awards**, and **Research Resources Awards**. A summary of FY 2003 program activities follows.

Grant-in-Aid Program

The annual Grant-in-Aid Program assists faculty in obtaining external research funding by providing financial support for preliminary activities (such as collecting preliminary data or conducting preliminary research) that will strengthen a major proposal to an extramural funding agency. Proposals must be clearly research-oriented. In FY 2003, twenty-six applications were submitted, and twelve awards were made for a total of $44,500.

New Investigator Awards

New Investigator Awards are designed for individual faculty who have not previously obtained external funding for research exceeding $10,000, either as principal investigator or co-principal investigator, from any source outside of the university, regardless of length of time of his or her NDSU appointment.

Researcher	Department	Project Title	Grant Amount
Brotherson, Sean	Child Development and Family Science	Understanding the Process of Reconciliation in Marriages Threatened by Separation or Divorce	$2,750
Fu, Huirong	Computer Science	Securing Wireless Networks: Key Management	$2,750
Hamilton, David	Chemistry	Design of Ruthenium Conjugates to Transferrin	$5,500
Li, Deying	Plant Sciences	Developing Methods to Use Local Materials for the Construction of Golf Course Greens	$4,500
Martin, Drew	Business Administration	Japanese Television Commercials: The Changing Role of Foreign Actors 1992-2002	$1,000
Neighbors, Clayton	Psychology	Computer-Based Normative Feedback Intervention for Higher Risk Drinking: Evaluating Duration of Efficacy	$2,750
Ode, Paul	Entomology	Tritrophic Effects of Sunflower Resistance on Natural Enemies of the Banded Sunflower Moth	$5,500
Reed, Wendy	Biological Sciences	Influence of Early Exposure to Maternally-Derived Steroids on Development and Performance of American Coots	$4,500
Salting, Donald	English	Khaayo Project: A Missing Piece to the Language Puzzle	$4,500
Schroeder, Mark	Electrical & Computer Engineering	Ambulatory Brain-Computer Interface Device: Evaluation and Comparison to Desktop Brain-Computer Interface System	$2,750
Thrasher, Michael	Music Education	Danish Clarinet Music of the Nineteenth Century	$3,500

Interdisciplinary Awards

Interdisciplinary Awards are designed to encourage new collaborative research activity between faculty from different disciplines who have not previously collaborated. At least two people must apply together in this category. Individuals may be from the same or different departments.

Researcher	Department	Project Title	Grant Amount
Sun, Wenfang Huo Qun	Chemistry Polymers and Coatings	Nonlinear Optical Studies of Metallo-Organic Nanocomposite Materials	$4,500

Travel Awards and Research Resources Awards

Small matching grants are provided to faculty and students for research-related needs. Faculty travel awards are made for travel purposes in seven different categories. Non-faculty travel awards are made for presentation of research at conferences. Applications for travel support are considered from faculty, undergraduate students, graduate students, post-docs, and research associates. Research Resources Awards are made for multi-user equipment and other special research-related needs.

The ND EPSCoR Office contributed $10,000 to the program to be used toward faculty and student travel awards. For the past several years, the President's Office has also provided significant additional funds for travel by faculty and staff. Travel awards provided through the Sponsored Programs Administration Office are often used together with the President's travel awards to finance faculty trips. The totals below do not include the President's travel awards.

	FY 2001		FY 2002		FY 2003	
	# of Awards	Amount	# of Awards	Amount	# of Awards	Amount
Faculty Travel Awards	88	$31,330	91	$33,113	66	$25,388
Non-Faculty Travel Awards	89	$16,482	125	$23,984	122	$24,250
Research Resource Awards	4	$8,569	1	$ 357	0	0
Totals	**181**	**$56,381**	**217**	**$57,454**	**188**	**$49,638**

Total Awarded in FY 2003 for Research and Consulting Committee Programs = $94,138

State Board of Agricultural Research and Education
Agricultural Research Fund

In 1997, the North Dakota State Legislature created the State Board of Agricultural Research (Sections 19-24 of chapter 4-05.1 of the North Dakota Century Code). Among other duties, SBARE administers the Agricultural Research Fund. The Agricultural Research Fund is a special fund in the state treasury derived from checkoffs indicated on the oil tax refund of $0.04 per gallon of gasoline. The monies in the fund must be expended for agricultural research.

Annually, SBARE apportions the Agricultural Research Fund: 70% to research activities affecting North Dakota agricultural commodities (those that account for at least two percent of the gross sales of all agricultural commodities grown or produced in the state, but the percentage allocated to each commodity cannot exceed the percentage that the gross sales of the commodity contribute to the total of gross sales of all agricultural commodities grown or produced the previous year); 18% to research activities affecting animal agriculture; and 12% to research activities affecting new and emerging crops. SBARE solicits research proposals and appoints committees to review the proposals and award grants competitively.

Researcher	Department	Project Title	Grant Amount
Chung Park	Animal and Range Sciences	Oral Nucleotides Enhance Immune Function of Newborn Beef Calves	9,768
J. W. Schroeder	Animal and Range Sciences	Altering Conjugated Linoleic Acid in Bovine Milk Fat for Nutraceutical Applications Using Oilseed in Feeding High Producing Dairy Cattle	23,323
J. W. Schroeder	Animal and Range Sciences	Embryo Bank Phase - Adding Value to Beef Production Systems with Dairy Embryo Transfer	15,343
Bob Henson Bryan Hanson Mark Halvorson	Carrington REC Langdon REC North Central REC	Nyjer Thistle Management	14,700
Vern Anderson	Carrington REC	Natural Beef Production: Evaluating Performance, Carcass Quality & Economics in Finishing Beef with Natural Feeding Practices in ND	17,425.50
Vern Anderson	Carrington REC	Determining Effects of Diet and Management on Mineral Needs and Supplementation Strategies for ND Beef Cows	18,080
Bob Henson	Carrington REC	Sunflower Head Rot Screening Nursery	4,500
Sam Chang	Cereal and Food Sciences	Expanding Utilization of Dry Peas, Lentils and Chickpeas Produced in ND	11,968
Cliff Hall	Cereal and Food Sciences	Flaxseed as a Component of Functional Foods	5,000
Monisha Chakraborty	Cereal and Food Sciences	Waxy Wheat, a Value-Added Commodity for Extending Shelf Life of Bread	14,400
Doug Landblom Cheryl Wachenheim	Dickinson REC Agribusiness and Applied Economics	Effects of Fat Supplementation Among Beef Cows on Post Calving Reproductive Performance, Calf Growth and Economics	17,661
Chip Poland	Dickinson REC	Expanding Annual Forage Production and use in the Northern Great Plains	3,355.50
Marion Harris	Entomology	Screening ND Hard Red and White Spring Wheats for Resistance to Orange Blossom Wheat Midge	9,000
Marion Harris	Entomology	Screening ND Durum Wheats for Resistance to Orange Blossom Wheat Midge	9,000
Denise Olson	Entomology	Study the Development and Reproductive Biology of Green Peach Aphid	4,030
Phillip Glogoza	Entomology	Soybean Aphid Establishment, Impact and Management for ND	18,000
Mark Boetel	Entomology	Integration of Bio-Based and Cultural Tools for Sugarbeet Root Maggot Control	5,716
Stephen Foster	Entomology	Development of Chemical Attractants for Insect Pests of Sunflowers	5,857.50
Gary Brewer	Entomology	Techniques to Improve Development of Sunflower Midge Resistance	8,700
Randy Mehlhoff	Langdon REC	Timothy Grass Production and Marketing Constraints in NE North Dakota	977

Researcher	Department	Project Title	Grant Amount
Scott Halley	Langdon REC	Effect of Calcium Applied along or with Ronilan Fungicide at Two Growth Stages for Control of White Mold on Canola	2,875
John Lukach Larry Swenson	Langdon REC Soil Science	Yield Response to Nitrogen Fertilizer by Application Timing in Hybrid and Open Pollinated Canola Varieties	4,741
Stephen Neate Neil Riveland	Plant Pathology Williston REC	Identifying Barley Lines with Resistance to Common Root Rot	8,490
Sukat Ali John Lukach Kent McKay	Plant Pathology Langdon REC North Central REC	Continuation of a Regional Disease Forecasting System	20,453
Carl Bradley	Plant Pathology	Sclerotinia Risk Map for Canola	5,000
Marcia McMullen	Plant Pathology	Disease Detection in Wheat for Improved Management Decision Tools	6,200
Jack Rasmussen Glen Statler	Plant Pathology	Evaluation of Hard Red Spring Wheat Breeding Lines for Resistance to Leaf Rust	11,098
Gary Secor	Plant Pathology	Support of Irrigated Potato Research	15,389
John Weiland	Plant Pathology	Evaluation of Weed species in Sugarbeet Fields for the Presence of Rhizomania Associated Viruses	950
Carl Bradley	Plant Pathology	2003 Survey of Estimated Yield, Cultural Practices and Pest Problems	4,719.50
Harlene Hatterman-Valenti	Plant Sciences	Woolly Elm Aphid Control in Juneberry	5,900
Harlene Hatterman-Valenti	Plant Sciences	Cover Crops for Erosion Control and Enhanced Onion establishment	13,100
Burton Johnson	Plant Sciences	Spearmint Production in North Dakota	4,000
Burton Johnson	Plant Sciences	Potential of Selected New Crops for Adaptation in North Dakota	6,500
Jerry Franckowiak	Plant Sciences	Increased Grain Size in Midwest Two-Rowed Barley	5,288
Rich Horsley	Plant Sciences	Development of Six-Rowed Feed Barley Cultivars With Multiple Disease Resistance	5,370
Burton Johnson Bryan Hanson	Plant Sciences Langdon REC	Harvest Date Influence on Yield and Seed Quality of Straight and Swathed Canola	4,990
Burton Johnson Bryan Hanson Bob Henson Mark Halvorson	Plant Sciences Langdon REC Carrington REC North Central REC	The Influence of Low Initial Stand on Canola Performance	8,400
Mohammed Mergoum	Plant Sciences	Efficient and Rapid Introgression of Valuable Traits into Adapted HRS Wheat	26,460
Shahryar Kianian	Plant Sciences	Introgression of FHB Resistance Genes from T. Dicoccoides to HRS Wheat	13,500
David Cai	Plant Sciences	Identification of Novel Sources of Resistance to FHB from Wild Relatives of Wheat and Transfer of the Resistance to Wheat	19,304
Bill Berzonsky	Plant Sciences	Pursuing the Use of Specialty Spring Wheats for Emerging Wheat Flour Tortilla Markets	4,500
Elias Elias	Plant Sciences	Develop Improved Durum Wheat Genotypes sing Doubled Haploid Breeding Methods	14,860
Phil McClean	Plant Sciences	Identification of Markers for Iron Deficiency Chlorosis Tolerance in Soybeans	15,668
Marcelo Carena	Plant Sciences	Identification of Heterotic Patterns for Early Maturity in Corn	23,007
Alan Dexter	Plant Sciences	Characterization of Carryover of “aged” Mesotrione and Rimsulfuron Residues in Soil	4,500
Ken Grafton	Plant Sciences	Using Conventiona and Novel Approaches to Evaluate Dry Bean Germplasm for Disease Resistance	17,090
David Hopkins Marcelo Carena	Soil Science Plant Sciences	Characterization of the “Alkali Problem” and Identification of Tolerant Corn in Salt-Affected Soils of the Red River Valley	4,857
Mohammed Khan	Soil Science	Managing Cercospora Leaf Spot Effectively in Sugarbeet	11,697
Jerry Bergman	Williston REC	Irrigated Potato Project	2,500
Jerry Bergman	Williston REC	Fine-Tuning a Nitrogen Budget System for Sprinkler and Flood Irrigated Sugarbeet Production	5,000
Total			**$513,211**

External Sponsored Projects

Agriculture

Animal & Range Sciences

Investigator(s)	Agency	Project Title	Awarded
Olson, David D	North American Equine Ranching Information Council, Inc.	North American Equine Ranching Information Council	$6,206
Olson, David D	Wyeth-Ayerst Pharmaceuticals	Educational Grant in Support of the Equine Program	$7,500
		Animal & Range Sciences Total:	**$13,706**
		Agriculture Total:	**$13,706**

Extension and Experiment Station

Agribusiness & Applied Economics

Investigator(s)	Agency	Project Title	Awarded
Gustafson, Cole Leistritz, F. Larry	ND Oilseed Council	Strategic Economic Feasibility and Impact of Biodiesel in North Dakota	$4,000
Koo, Won	DHS/U.S. Customs Service	Analysis of U.S. Farm and Trade Policies	$750,000
Leistritz, F. Larry	ND Department of Agriculture	The Role of Agriculture in North Dakota	$5,000
Leistritz, F. Larry	ND Farmers Union	The Role of Agriculture in North Dakota	$5,000
Leistritz, F. Larry	DOI/ND Game and Fish Department	Time-Series and Cross-Sectional Analysis of Sportmen Expenditures, 1976-2002	$21,764
Lougheed, Margaret Nelson, William	City of Fargo	Child Care Cooperative Feasibility Study	$8,350
Nelson, William Wachenheim, Cheryl	USDA/Michigan State University	Hybrid Striped Bass Aquaculture - Marketing	$22,487

Rathge, Richard Olson, Kay	DHHS/ND Department of Health	Prenatal Risk Assessment Monitoring System (PRAMS)	**$87,300**
Rathge, Richard Gillispie, Mary Alice - Pharmacy Practice Ross, James - Information Technology Services	NDSU Development Foundation	Healthcare Information System for Refugees	**$10,000**
Rathge, Richard	Annie E. Casey Foundation	North Dakota Kids Count 2003 Activities	**$75,000**
Rathge, Richard	Annie E. Casey Foundation	Rural Great Plains Collaboration - Technical Assistance	**$14,831**
Rathge, Richard	DHHS/NIH/NLM/Family HealthCare Center	Healthcare Information System for Refugees	**$12,900**
Swenson, Andrew	USDA/Economic Research Service	Analysis of Income Variability and Stabalization	**$25,000**
Swenson, Andrew Aakre, Dwight	USDA/RMA/Montana State University	Targeted Commodity Education and Information for Montana, North Dakota, South Dakota: South Dakota and Wyoming Producers	**$18,180**
Tweeten, Kathleen	Ewing Kaufman Foundation	Mini-Society	**$26,000**
Wilson, William	ND Grain Growers Association	Issues in Development and Adoption of GM Wheats	**$20,000**
Wilson, William	USDA/ARS	Demand for Wheat Protein in International Markets	**$40,000**
Wilson, William	ND Wheat Commission	Market Development Support	**$15,000**

Agribusiness & Applied Economics Total: **$1,160,812**

Agricultural & Biosystems Engineering

Investigator(s)	Agency	Project Title	Awarded
Fox, Sheri	EPA/ND Department of Agriculture	Groundwater Protection Strategy Program	**$45,000**
Hellevang, Kenneth	Northarvest Bean Growers Association	Harvest Date to Maintain Pinto Bean Color Quality, Natural Air Drying and Rewetting of Pinto Beans	**$10,000**

Hellevang, Kenneth	Northarvest Bean Growers Association	Farm Storage Recommendations for Dry Edible Beans	**$24,000**
Hofman, Vernon Hellevang, Kenneth Scherer, Thomas	DOE/ND Department of Commerce	Energy Conservation Program	**$15,000**
Hofman, Vernon	EPA/ND Department of Health	Deep Soil Nitrogen and Water Quality	**$10,800**
Nowatzki, John	EPA/ND Department of Health	Satellite Imagery Applications to Water Quality Protection	**$60,000**
Nowatzki, John	NASA/John Glenn Research Center	NASA Space Grant/Land Grant Extension Geospatial Education Program	**$222,490**
Scherer, Thomas	USDA/ARS	Automated Control of a Misting System for FHB Field Research	**$2,561**
Seelig, Bruce	USDA/CSREES/Colorado State University	Regional Water Quality Coordination Program - North Dakota	**$166,327**
Steele, Dean Greenland, Richard - Carrington REC Hatterman-Valenti, Harlene - Plant Sciences	Northern Plains Potato Growers Association	Plot Studies of Potato Planting Configurations	**$10,000**

Agricultural & Biosystems Engineering Total: **$566,178**

Agricultural Administration

Investigator(s)	Agency	Project Title	Awarded
Grafton, Kenneth	USDA/National Agricultural Statistics Service	Collection, Analysis and Publication of Primary Crop and Livestock Statistical Data	**$52,000**
Grafton, Kenneth	USDA/CSREES/South Dakota State University	Four-State Ruminant Consortium	**$5,000**
Jensen, Patricia	USDA/CSREES	Crop Diversification - North Dakota and Missouri	**$748,269**
Swank, James	USDA/ARS	Research Support Agreement - Bioscience Research Laboratory FY 2003	**$261,080**
Swank, James	USDA/ARS	Research Support Agreement - NGPRC FY 2003	**$3,000**

Agricultural Administration Total: **$1,069,349**

Agricultural Communications

Investigator(s)	Agency	Project Title	Awarded
Koch, Becky Hellevang, Kenneth - Agricultural & Biosystems Engineering	USDA/CSREES/Michigan State University	Emergency Management Training for the Cooperative Extension Service	**$5,100**
		Agricultural Communications Total:	**$5,100**

Animal & Range Sciences

Investigator(s)	Agency	Project Title	Awarded
Barker, William Enz, John - Soil Science Olson, Denise - Entomology Richardson, Jimmie - Soil Science Rider, David - Entomology Sedivec, Kevin	U.S. Army/ND National Guard	Natural Resource Data Acquisition and Integrated Pest Management Research to Control Leafy Spurge	**$114,835**
Bauer, Marc Lardy, Greg	USDA/CSREES/Montana State University	Rumen Degradable and Undegradable Protein Supplementation in Barley-Based High-Grain Finishing Diets	**$20,000**
Caton, Joel Bauer, Marc Lardy, Greg - Plant Sciences	Ridley Block Operations	Cooked Molasses Blocks for Cattle Fed Low-Quality Hay	**$18,000**
Grazul-Bilska, Anna Reynolds, Lawrence Sheridan, Mark - Biological Sciences	NSF	Confocal Microscopy System for Physiological and Endocrinological Studies	**$60,099**
Kirby, Donald	USDA/ARS	Controlled Burning for Rangeland Restoration	**$25,324**
Kirby, Donald	USDA/ARS	Controlled Burning: Enhancement/Restoration of Native Plants to Rangeland	**$40,054**
Kirby, Donald	EPA/ND Department of Health	Index of Wetland Biological Integrity Development	**$27,613**
Kirby, Donald	USGS/Northern Prairie Wildlife Research Center	Describing Characteristics of Hydric Soils from Wetlands in Minnesota	**$2,392**
Kirby, Donald	USDA/ARS	Controlled Burning: Enhancement/Restoration of Native Plants to Rangeland	**$25,200**

Kirby, Donald	Bellaire Corporation	Collect Data on Reclaimed Lands	**$6,585**
Kirby, Donald	USDA/Forest Service	Fire Effects on Vegetative Species Composition in Western North Dakota	**$21,000**
Kirby, Donald	Falkirk Mining Company	Evaluation of Grassland Renovation	**$5,405**
Kirby, Donald Sedivec, Kevin	USDA/Forest Service/ND Game and Fish Department	USFS Special Review Team	**$58,706**
Lardy, Greg Bauer, Marc	USDA/CSREES/Montana State University	Processing Feed Barley in Backgrounding Diets	**$20,000**
Lardy, Greg	USDA/ARS	Selenium in Beef Raised in North Dakota	**$26,060**
Lardy, Greg	USDA/ARS/University of Illinois	Selenium Content of Beef on North Dakota Rangelands	**$8,000**
Park, Chung	Northern Canola Growers Association	Dietary Use of Canola Seeds for Production of an Anticancer Agent in Milk	**$13,609**
Peterson, Lisa Lardy, Greg - Plant Sciences Stoltenow, Charles - Veterinary & Microbiological Sciences	ND Beef Commission	Beef Quality Assurance	**$10,000**
Peterson, Lisa Lardy, Greg Stoltenow, Charles - Veterinary & Microbiological Sciences	National Cattlemen's Beef Association	Beef 101: From Calves to Carcasses	**$12,456**
Redmer, Dale Reynolds, Lawrence	USDA/CSREES	Role of Angiogenic Factors in Ovarian Function	**$230,000**
Redmer, Dale Berg, Paul Moore, Bert	USDA/ARS	Detection and Eradication of Ovine Scrapie TSE at NDSU	**$60,500**
Reynolds, Lawrence Redmer, Dale	DHHS/NIH/NHLBI	The Major Angiogenic Factors in Placental Angiogenesis	**$141,000**

Schroeder, J.W. Bauer, Marc Caton, Joel Lardy, Greg - Plant Sciences Marchello, Martin Park, Chung Redmer, Dale Reynolds, Lawrence	USDA/CSREES	Equipment Necessary to Analyze Conjugated Linoleic Acid Content in Post-Harvest Milk and Meat from Ruminants Fed Certain Oilseeds	**$22,450**
		Animal & Range Sciences Total:	**$969,288**

Carrington REC

Investigator(s)	Agency	Project Title	Awarded
Anderson, Vern	ND Barley Council	Equipment for Feedmill	**$24,000**
Anderson, Vern	North American Equine Ranching Information Council, Inc.	Equipment for CREC Feedmill	**$25,200**
Anderson, Vern	Dakota Growers Pasta Company	Feedmill Renovation and Expansion	**$10,000**
Anderson, Vern	ND Oilseed Council	Renovation and Expansion of Feedmill and Feedlot	**$20,000**
Endres, Gregory Hanson, Bryan - Langdon REC Schatz, Blaine	ND Oilseed Council	Flax Response to Nitrogen and Seeding Rates	**$9,500**
Endres, Gregory Halvorson, Mark - North Central REC Hanson, Bryan - Langdon REC Henson, Robert Schatz, Blaine	ND Oilseed Council	Flax Response to Nitrogen and Seeding Rates	**$9,500**
Henson, Robert Eriksmoen, Eric - North Central REC McKay, Kent - North Central REC Metzger, Steve Schatz, Blaine	USDA/CSREES/University of Idaho	Management of Ascohyta Blight in Chickpea by Cultivar Selection and Fungicide Application of FY 2002 Cool Season Food Legume Research	**$10,000**
Henson, Robert	USDA/ARS	Evaluation of Canola Cultivars for Resistance to Sclerotinia	**$5,000**
Henson, Robert Hanson, Bryan - Langdon REC McKay, Kent - North Central REC	Northern Canola Growers Association	Evaluation of Dormant Seeding Canola in North Dakota	**$5,000**

Henson, Robert	USDA/CSREES/Michigan State University	IR-4 Food Use Project on Dry Bean 2002	**$6,400**
Henson, Robert	National Sunflower Association	Sunflower Head Rot Screening Nursery	**$1,500**
Schatz, Blaine Ringwall, Kris - Dickinson REC	EPA/ND Department of Health	Livestock Waste Educational Information & Assistance Program	**$157,778**
Schatz, Blaine	Garrison Diversion Conservancy District	Oakes Irrigation Field Trials	**$160,000**
		Carrington REC Total:	**$443,878**

Center for 4-H Youth Development

Investigator(s)	Agency	Project Title	Awarded
Courneya, Louis Joseph	Otto Bremer Foundation/Tri-College University	Red River Center for Watershed Education	**$36,709**
Courneya, Louis Joseph	Otto Bremer Foundation/Tri-College University	Red River Center for Watershed Education	**$20,171**
Vettern, Rachelle Courneya, Louis Joseph - Extension Administration Zotz, Karen - Extension Administration	National 4-H Council	Youth In Governance	**$22,000**
Vettern, Rachelle	Northwest Area Foundation	Leadership Plenty Training Program	**$5,500**
		Center for 4-H Youth Development Total:	**$84,380**

Cereal & Food Sciences

Investigator(s)	Agency	Project Title	Awarded
Chakraborty, Monisha	ND Wheat Commission	Waxy Wheat, A Value-Added Commodity for Extending Shelf Life of Bread	**$4,800**
Chang, Sam K.C.	ND Soybean Council	Effect of Storage on the Quality of Soybeans	**$13,515**
Hall, Clifford	USDA/CSREES	Acquisition of a Preparative High Performance Liquid Chromatographic	**$22,331**
Hall, Clifford Wolf-Hall, Charlene	USDA/CSREES/University of Idaho	Development and Characterization of Chickpea Starter Cultures for Bread Making	**$12,000**

Khan, Khalil	ND Wheat Commission	Wheat Variety Identification and Evaluation of Grain Quality for Breadmaking or Basic Wheat Quality Research	**$10,000**
Khan, Khalil	USDA/ARS	Rapid Prediction Model(s) for Measuring Gluten Strength Properties in Hard Spring Wheat	**$88,016**
Olson, Truman	MN Wheat Research & Promotion Council	Hard Red Spring Wheat Regional Crop Quality Survey	**$3,000**
Olson, Truman Khan, Khalil	Montana Wheat & Barley Committee	2002 Hard Red Spring Wheat and Durum Wheat Regional Crop Quality Surveys	**$7,000**
Olson, Truman Khan, Khalil - Veterinary & Microbiological Sciences	ND Wheat Commission	Hard Red Spring and Durum Wheat Regional Crop Survey	**$31,000**
Olson, Truman Khan, Khalil - Veterinary & Microbiological Sciences	ND Wheat Commission	North Dakota HRS Variety Evaluation	**$2,500**
Olson, Truman Khan, Khalil - Veterinary & Microbiological Sciences	ND Wheat Commission	Technical and Information Services	**$32,000**
Olson, Truman	MN Wheat Research & Promotion Council	Hard Red Spring Wheat Regional Crop Quality Survey	**$4,500**
Schwarz, Paul	American Malting Barley Association	Survey of the 2001 North Dakota and Minnesota Barley Crop	**$10,900**
Schwarz, Paul Bauer, Marc - Animal & Range Sciences	American Malting Barley Association	Survey of 2002 Regional Barley Crop Quality	**$12,900**
Schwarz, Paul	American Malting Barley Association	Development of a Method for the Determination of Wort and Beer Arabinoxylan Content	**$41,200**
Schwarz, Paul	USDA/ARS	Malting Barley Deoxynivalenol Diagnostic Services	**$107,254**
Wolf-Hall, Charlene Schwarz, Paul - Plant Sciences	ND Barley Council	Acquisition of an Ozone Generator with Analyzer	**$1,000**
Wolf-Hall, Charlene Schwarz, Paul - Plant Sciences	Rahr Malting Company	Acquisition of an Ozone Generator with Analyzer	**$2,000**
		Cereal & Food Sciences Total:	**$405,916**

Child Development & Family Science

Investigator(s)	Agency	Project Title	Awarded
Bartoszuk, Karin Brotherson, Sean Pleban, Frank - Health, Nutrition, and Exercise Sciences	USDA/CSREES	Building Connections	**$149,765**
Brotherson, Sean	DHHS/ND Department of Human Services	Development of Father-Friendly Assessment Tool for Head Start Staff	**$4,300**
Brotherson, Sean	DHHS/ND Department of Human Services	Development of a Parenting Newsletter for Fathering Young Children	**$2,250**
		Child Development & Family Science Total:	**$156,315**

Dickinson REC

Investigator(s)	Agency	Project Title	Awarded
Carr, Patrick Zwinger, Steve - Carrington REC	USDA/CSREES/University of Nebraska	Bringing Small Grain Variety Development and Selection onto Organic Farms	**$72,953**
Nelson, James Ashley, Roger	ND Barley Council	No-Till Plot Drill	**$10,000**
Nelson, James Markegard, Brian - Architecture & Landscape Architecture Ottmar, Garry - Architecture & Landscape Architecture	EPA/Dakota West RC & D	Livestock Facility Assistance Program	**$71,849**
		Dickinson REC Total:	**$154,802**

Entomology

Investigator(s)	Agency	Project Title	Awarded
Boetel, Mark A.	USDA/ARS	Genetic Variation, Phylogeography and Molecular Systematics of Lygus sp.	**$48,800**
Boetel, Mark A.	USDA/ARS	Mechanisms Regulating Diapause in the Sugarbeet Root Maggot	**$36,000**
Boetel, Mark A.	USDA/ARS	Field Evaluation of Candidate Biocontrol Fungi to Control Sugarbeet Root Maggot	**$8,000**
Boetel, Mark A.	Sugarbeet Research & Education Board of MN & ND	Sugarbeet Insect Biology and Control	**$51,500**

Boetel, Mark A.	Beet Sugar Development Foundation	Sugarbeet Testing	**$3,000**
Brewer, Gary	National Sunflower Association	Management Practices for Sunflower Midge	**$4,050**
Brewer, Gary	EPA	Conservation of Pollinators as a Yield Management Strategy in Sunflower	**$40,000**
Brewer, Gary	National Sunflower Association	Techniques to Improve Development of Sunflower Midge Resistance	**$2,900**
Foster, Stephen Charlet, Laurence	National Sunflower Association	Development of Chemical Attractants for Insect of Sunflowers	**$1,952**
Glogoza, Phillip	USDA/CSREES/University of Illinois	Overwintering of Aphis Glycines on Rhamnus spp.	**$4,660**
Glogoza, Phillip	USDA/CSREES/Michigan State University	Pesticide Use and Pest Management Issues in North Dakota and the North Central Region	**$51,512**
Glogoza, Phillip	ND Wheat Commission	Orange Wheat Blossom Midge Survey	**$4,500**
Harris, Marion	USDA/CSREES	Mechanisms of Host-Plant Selection in the Wheat Midge	**$75,000**
Harris, Marion	USDA/Forest Service	Prairie Fringed Orchid Pollinator Surveys and Studies	**$25,000**
Harris, Marion	ND Wheat Commission	Screening North Dakota Hard Red and White Spring Wheat for Resistance to Wheat Midge	**$3,000**
Harris, Marion	USDA/ARS	Cold Storage of Parasitized Eggs of the Glassy-Winged Sharpshooter	**$80,000**
Harris, Marion	USDA/Forest Service	Prairie Fringed Orchid Pollinator Surveys and Studies	**$30,000**
Olson, Denise Knodel, Janet - North Central REC	ND Department of Agriculture	An IPM Approach to Managing the Crucifer Flea Beetle Phyllotreta Cruciferae Goeze (Coleoptera: Chrysomelidae)	**$54,978**
Rider, David Fauske, Gerald	MN Chapter of the Nature Conservancy	Prairie Arthropod Community Dynamics in Western MN	**$10,000**
		Entomology Total:	**$534,852**

Extension - off campus

Investigator(s)	Agency	Project Title	Awarded
Peterson, Harvey	USDA/Forest Service/ND Game and Fish Department	Participation in the Dakota Prairie Scientific Review Team	**$16,295**
		Extension - off campus Total:	**$16,295**

Extension Administration

Investigator(s)	Agency	Project Title	Awarded
Hauck, Duane	ND Wetlands Trust	Enhancing the Wetlands of North Dakota's Coteau Region	**$2,000**
Hauck, Duane Maher, George - Agricultural & Biosystems Engineering	USDA/Natural Resources Conservation Service	Technical Service Provider Training and Certification Program	**$180,000**
Hauck, Duane	USDA/ACES/Auburn University	USDA/Army School-Age and Teen Project	**$97,973**
Hauck, Duane	University of Minnesota	Sugarbeet Specialists	**$116,839**
Hvidsten, Marie Flage, Lynette - Agricultural Communications	Northwest Area Foundation	Community and Leadership Development Program	**$12,000**
Theurer, Debra Sturn, Gerald	Dickinson Public School District	West Dakota Parent and Family Resource Center	**$24,570**
		Extension Administration Total:	**$433,382**

Extension County Programs

Investigator(s)	Agency	Project Title	Awarded
Brummond, Brad	USDA/CSREES/University of Nebraska	Aiding in the Coexistence of Sustainable and Biotech Agriculture by Minimizing Contamination	**$99,978**
		Extension County Programs Total:	**$99,978**

Health, Nutrition, and Exercise Sciences

Investigator(s)	Agency	Project Title	Awarded
Garden Robinson, Julie Lardy, Greg - Animal & Range Sciences Marchello, Martin - Animal & Range Sciences Stoltenow, Charles - Animal & Range Sciences Wilhelm, Anissa - Education	USDA/CSREES	Food Safety in the 21st Century: Improving the Process	**$233,915**
Garden Robinson, Julie	March of Dimes - ND Chapter	Folic Acid Education	**$15,000**
Garden Robinson, Julie	DHHS/FDA	Meeting the Food Safety Need of Refugee Families in ND or Food Safety Training for Culturally Diverse New Americans	**$2,000**
Tweten, Margaret Holes-Dickson, Barbara	USDA/ND Department of Human Services	Family Nutrition Program	**$1,356,601**
		Health, Nutrition, and Exercise Sciences Total:	**$1,607,516**

Hettinger REC

Investigator(s)	Agency	Project Title	Awarded
Faller, Timothy Anderson, Leif Nudell, Dan	Various Contributors	Southwest Feeders Support	**$32,500**
Faller, Timothy Anderson, Leif Nudell, Dan	ND Agricultural Products Utilization Commission	Southwest Feeders	**$36,160**
Faller, Timothy	USDA/ARS	Sheep Maintenance in Scrapie Secure Unit (SSU)	**$55,000**
		Hettinger REC Total:	**$123,660**

Langdon REC

Investigator(s)	Agency	Project Title	Awarded
Halley, Scott Lukach, John Schatz, Blaine - Carrington REC	USDA/ARS	Planting System, Fungicide and Application Timing for Control of White Mold in Field Peas	**$29,500**
Halley, Scott Lukach, John	ND Oilseed Council	New Fungicide Application for Control of Pasmo Disease on Flax Cultivars with Emphasis on Yield Enhancement	**$1,005**

Halley, Scott	USDA/ARS	Spray System, Spray Volume, and Spray Orifice Orientation for Improved Efficacy of Fungicide or Aerial Applied Fungicide and Application Technology for Improved Efficacy of Fungicide	**$22,099**
		Langdon REC Total:	**$52,604**

North Central REC

Investigator(s)	Agency	Project Title	Awarded
Fisher, Jay	USDA/CSREES/South Dakota State University	Consortium for Alternative Crops	**$57,000**
Fisher, Jay	USDA/CSREES	Extension Indian Reservation Program - Fort Berthold Reservation	**$88,599**
Fisher, Jay	USDA/CSREES/South Dakota State University	Consortium for Alternative Crops	**$80,000**
Hanson, Tom	USDA/CSREES/University of Nebraska	North Dakota Plan of Work	**$19,000**
Hanson, Tom	USDA/CSREES/University of Nebraska	North Dakota Plan of Work	**$19,000**
Jenks, Brian	USDA/CSREES/Michigan State University	Sulfentrazone and Fenamidone Residue Trials	**$12,600**
Jenks, Brian	Northern Canola Growers Association	Canada Thistle Control in Canola	**$1,334**
McKay, Kent	ND Oilseed Council	Effect of Swathing Versus Straight Harvesting on Seed Yield, Boll and Seed Shatter Lodging and Seed Quality of Flax Cultivars	**$5,150**
McKay, Kent Halvorson, Mark Jenks, Brian	USDA/CSREES/Montana State University	Chickpea: Economic Diversification Opportunity for Northern Plains Cropping Systems	**$3,068**
		North Central REC Total:	**$285,751**

Plant Pathology

Investigator(s)	Agency	Project Title	Awarded
Ali, Shaukat	USDA/ARS	Effect of Inoculum Level on FHB Development and Determination of G. Zeae Population on Leaves	**$17,314**

Ali, Shaukat McMullen, Marcia	MN Wheat Research & Promotion Council	Continuation of the Wheat Disease Forecasting System	**$850**
Ali, Shaukat McMullen, Marcia	ND Barley Council	Continuation of a Regional Disease Forecasting System	**$1,650**
Bradley, Carl A Halley, Scott - Langdon REC Henson, Robert - Carrington REC	ND Oilseed Council	Evaluation of Fungicide Seed Treatments on Flax Cultivars Differing in Seed Color	**$11,400**
Bradley, Carl A	ND Oilseed Council	Survey for Flax Diseases in North Dakota	**$1,548**
Bradley, Carl A Charlet, Laurence - Entomology Nowatzki, John - Agricultural & Biosystems Engineering	National Sunflower Association	2003 Survey of Estimated Yield, Cultural Practices and Pest Problems	**$8,481**
Del Rio Mendoza, Luis	Northarvest Bean Growers Association	Dry Bean Disease Control Research Program for the Northern Plains 2002	**$52,738**
Del Rio Mendoza, Luis Henson, Robert - Carrington REC	USDA/ARS	Use of Intercept for Control of Sclerotinia on Dry Beans, Canola, and Sunflowers in North Dakota	**$29,500**
Del Rio Mendoza, Luis	USDA/ARS	Sclerotinia Control and Management in Canola	**$75,000**
Del Rio Mendoza, Luis	USDA/CSREES/Meridian Environmental Technology, Inc.	Uniform Trials to Identify Safe Fungicides and Biological Agents Effective Against Fusarium Head Blight Across Four Locations and Multiply Wheat Classes	**$27,000**
Freeman, Thomas	USDA/CSREES/University of California	Ultrastructural Contributions to the Study of the Glassy-Winged Sharpshooter and Pierce's Disease	**$115,070**
Gudmestad, Neil	USDA/ARS	Virulence Variation in Single Zoospore Populations of Phytophthora Infestans	**$42,878**
Gudmestad, Neil	USDA/ARS	An Extraction Procedure to Obtain Amplifyable DNA from Potato Tubers Naturally Infected with Clavibacter Michiganensis Subsp. Sepedonicus to Conduct a Polymerase Chain Reaction (PCR)	**$44,769**
Gudmestad, Neil Secor, Gary	Northern Plains Potato Growers Association	Support of Irrigated Potato Research in North Dakota	**$47,500**
Gudmestad, Neil	USDA/ARS	Optimization of the Cms PCR-ELOSA Test for Diagnostic and Seed Lot Screening	**$54,935**

Gudmestad, Neil	USDA/ARS	Analysis of Virulence and Genotypic Variation to Asexual Single Zoospore Populations of P. Infestants Using Microsatellite DNA Markers	**$58,863**
Gudmestad, Neil	USDA/ARS	Molecular Characterization of Potato Virus Y Isolates Found in the United States Causing Potato Tuber Necrotic Ringspot	**$48,464**
Gudmestad, Neil	USDA/ARS	Influence of Tilage and Chemical Application Practices on Potato Early Drying Disease	**$53,257**
Gudmestad, Neil	Northern Plains Potato Growers Association	Management of Black Dot of Potato Using Strobilurin Fungicides	**$9,000**
Gudmestad, Neil Secor, Gary	Northern Plains Potato Growers Association	Support of Irrigated Potato Research in North Dakota	**$40,000**
Gudmestad, Neil	Northern Plains Potato Growers Association	Effect of Seed Treatment in Furrow Fungicides on Silver Scurf of Potato	**$14,000**
Gudmestad, Neil	Northern Plains Potato Growers Association	Factors Affecting Efficacy of Metam Sodium for the Control of Verticillum Wilt	**$10,000**
Gudmestad, Neil	RD Offutt Company	Comparative Aspects of Potato Production in Different Environments	**$39,980**
Gudmestad, Neil	J.D. Watkins Enterprises, Inc.	Validation of Potato Production Sites and Cultivar Selection for Frozen French Fry Processing in Russia	**$40,000**
McMullen, Marcia	USDA/ND Department of Agriculture	Survey of Flag Smut, Dwarf Bunt and Cereal Beetle	**$3,000**
McMullen, Marcia Biller, Cheryl	USDA/CSREES/Kansas State University	Plant Diagnostic Center Laboratories for Plant Disease and Pest Diagnosis and Surveliance	**$3,000**
McMullen, Marcia	USDA/ARS	Identification of Application Technologies that will Optimize Fungicide Efficacy against Fusarium Head Blight	**$61,138**
Neate, Stephen	American Malting Barley Association	Use of Intercept for Control of Sclerotinia on Dry Beans, Canola and Sunflower in North Dakota or Barley Diseases and Their Control	**$59,600**
Neate, Stephen	USDA/ARS	Screening Barley Lines for Scab Resistance in Uniform Nurseries or Resistance Screening, Stubble Management and Split Fungicide Application for Control of FHB in Barley	**$48,425**

Neate, Stephen	ND Barley Council	Update and Improve Irrigation Equipment	**$6,000**
Neate, Stephen Riveland, Neil - Williston REC	ND Barley Council	Identifying Barley Lines with Resistance to Common Root Rot	**$2,950**
Nelson, Berlin	ND Soybean Council	Control of Soybean Diseases	**$48,300**
Nelson, Berlin	USDA/ARS/University of Illinois	Resistance in Soybean to Sclerotinia	**$7,500**
Nelson, Berlin	University of Wisconsin-Madison	Limiting Losses to Phytophthora Sojae in the North Central Region	**$11,812**
Rasmussen, Jack	Northarvest Bean Growers Association	Development of Dry Bean Populations with Possible Resistance to White Mold	**$15,000**
Rasmussen, Jack	Northarvest Bean Growers Association	Resistance to Bean Rust	**$3,600**
Secor, Gary	USDA/ARS	Late Blight	**$2,500**
Secor, Gary	USDA/ARS	Enhanced Breeding for Resistance to Silver Scurf Disease of Potato	**$21,732**
Secor, Gary Gudmestad, Neil	Sugarbeet Research & Education Board of MN & ND	Evaluating Sensitivity of Cercospora Beticola to Foliar Fungicides in Sugarbeet Fields of MN and ND	**$13,205**
Secor, Gary	Various Contributors	Research on Baseline Sensitivity of Cercospora Beticola	**$31,000**
Statler, Glen	USDA/ARS	Evaluation of Sunflower Germplasm for Resistance to Sclerotinia Diseases	**$49,268**
Weiland, John	Sugarbeet Research & Education Board of MN & ND	Evaluation of Weed Species in Sugarbeet Fields for the Presence of Rhizomania Associated Viruses	**$950**
Weiland, John	Sugarbeet Research & Education Board of MN & ND	Evaluation of the Prevalence and Distribution of Rhizomania Complex Viruses in the Glyndon Replicated Trail Location	**$5,300**
		Plant Pathology Total:	**$1,238,477**

Plant Sciences

Investigator(s)	Agency	Project Title	Awarded
Berzonsky, William	Monsanto Company	Developing Roundup Ready Spring Wheat	**$28,837**
Berzonsky, William	ND Wheat Commission	Technician: Hard White Spring Wheat	**$33,370**
Berzonsky, William	USDA/ARS	Rapid Development of Specialty Spring Wheat Germplasm and Cultivars with Diverse Sources of FHB Resistance	**$48,505**
Cai, Xiwen	ND Wheat Commission	Cytogenetics	**$5,000**
Cai, Xiwen	USDA/ARS	Saturation and Physical Mapping of Qfhs.ndsu-3AS in Durum Wheat or Characterization of Resistance to Fusarium Head Blight in Wheat and its Relatives	**$56,355**
Cai, Xiwen Berzonsky, William Elias, Elias Mergoum, Mohamed	ND Wheat Commission	Identification of Novel Sources of Resistance to FHB from Wild Relatives of Wheat and Transfer of the Resistance to Wheat	**$6,435**
Carena, Marcelo J.	ND Corn Growers Association	Identification of Heterotic Patterns for Early Maturity in Corn	**$38,681**
Carena, Marcelo J.	Pioneer Hi-Bred International, Inc.	Salary Support for Marcelo D. Melani	**$10,000**
Carena, Marcelo J.	Pioneer Hi-Bred International, Inc.	Salary Support for Clarissa Carvalho	**$25,000**
Carter, Jack	ND Oilseed Council	Flaxseed as a Component of Finishing Cattle Diets	**$6,009**
Carter, Jack	AmeriFlax	Salary and Office Expenses for Jack Carter	**$6,500**
Carter, Jack	ND Oilseed Council	Flaxseed as a Component of Finishing Cattle (Holstein) Diets	**$30,170**
Carter, Jack	AmeriFlax	Salary Support for Dr. Carter and Office Expenses	**$17,000**

Ciernia, Mark	USDA/CSREES/Michigan State University	Assembling of Data, Collecting and Shipping of Residue Samples for IR-4 Program 2001 Food Use Projects	**$25,300**
Dai, Wenhao David	NDSU Development Foundation	Propagating Hardy, Superior Cultivars/Selections Using Micropropagation	**$2,560**
Dexter, Alan Khan, Mohamed - Soil Science	Sugarbeet Research & Education Board of MN & ND	Sugarbeet Research and Extension Projects	**$199,000**
Dexter, Alan Bresnahan, Gail	Sugarbeet Research & Education Board of MN & ND	Characterization of Carryover of "Aged" Mesotrione & Rimsulfuron Residues in Soil	**$1,500**
Elias, Elias	ND Wheat Commission	Expanded Durum Wheat Breeding Project	**$7,500**
Elias, Elias	USDA/ARS	Development of Durum Wheat Resistant to Fusarium Head Blight	**$119,541**
Elias, Elias	ND Wheat Commission	Develop Improved Durum Wheat Genotypes using Doubled Haploid Breeding Method	**$4,953**
Franckowiak, Jerome	American Malting Barley Association	Breeding and Genetics of Two-Rowed Malting Barley	**$36,000**
Franckowiak, Jerome	USDA/ARS	Enhanced Resistance to Fusarium in Two-Rowed Barley	**$70,754**
Franckowiak, Jerome	ND Barley Council	Increased Grain Size in Midwest Two-Rowed Barley	**$2,644**
Grafton, Kenneth Henson, Robert - Carrington REC	USDA/ARS	Identify and Introgress Molecular Markers for White Mold Resistance in Dry Beans	**$5,000**
Grafton, Kenneth	USDA/ARS	Development of Technological Advancement of Sclerotinia Management	**$30,000**
Grafton, Kenneth Schneiter, Albert	Northarvest Bean Growers Association	Development of Pinto Bean Cultivars with Improved Seed Coat Color Retention	**$86,000**
Hammond, James	ND Oilseed Council	Effect of Latitude on Oil Content and Quality of Flaxseed	**$15,000**
Hatterman-Valenti, Harlene Lafta, Abbas Steele, Dean - Agricultural & Biosystems Engineering Thompson, Asunta (Susie)	Northern Plains Potato Growers Association	Influence of Soil Moisture and Temperature on Sugar-End Development in Irrigated Potato	**$16,560**

Hatterman-Valenti, Harlene	NDSU Development Foundation	Diversifying Economic Development Through Organic Herb Production	**$10,000**
Hatterman-Valenti, Harlene	NDSU Development Foundation	Engage NDSU with the Community Through Sustainable Garden Project	**$10,000**
Helms, Ted	ND Soybean Council	Breeding Improved Cultivars for Yield and Pest Resistance	**$110,000**
Helms, Ted Goos, Robert Jay - Soil Science McClean, Phil	ND Soybean Council	Identification of Molecular Markers for Iron Chlorosis Tolerance in Soybean	**$29,300**
Horsley, Richard	American Malting Barley Association	Six-Row Barley Breeding and Genetics	**$62,000**
Horsley, Richard Franckowiak, Jerome	American Malting Barley Association	Increase of Experimental Barley Lines at a Southern Lines Southern Location: Yuma, Arizona	**$12,800**
Horsley, Richard	USDA/ARS	Accelerated Development of Scab Resistant Barley Varieties	**$103,649**
Horsley, Richard Neate, Stephen - Plant Pathology	ND Barley Council	Development of Six-Rowed Feed Barley Cultivars with Multiple Disease Resistance	**$6,630**
Horsley, Richard	NDSU Development Foundation	Ken Lamb Graduate Assistantship - Research on FHB in Six-Rowed Barley	**$16,000**
Johnson, Burton Hanson, Bryan - Langdon REC	Northern Canola Growers Association	Harvest Date Influence on Yield and Seed Quality Straight Combined Canola	**$832**
Johnson, Burton	ND Agricultural Products Utilization Commission	Industrial Hemp Production Guidelines for North Dakota	**$55,000**
Kegode, George	Northern Plains Potato Growers Association	Nightshade Control in Potato	**$2,000**
Kianian, Shahryar	NSF	The Structure and Function of the Expressed Portion of the Wheat Genome	**$4,400**
Kianian, Shahryar	NSF/University of California	The Structure and Function of the Expressed Portion of Wheat Genome	**$87,491**
Kianian, Shahryar	ND Wheat Commission	PS-4 Expanded Wheat Germplasm Enhancement	**$7,500**

Kianian, Shahryar	USDA/ARS	Development of Markets Linked to FHB Resistance in Hexaploid Wheat	**$100,032**
Kianian, Shahryar Elias, Elias Manthey, Frank - Cereal & Food Sciences Ransom, Joel	USDA/CSREES/University of California-Davis	Bringing Genomics to the Wheat Fields	**$60,814**
Kianian, Shahryar	ND Wheat Commission	Introgression of FHB Resistance Genes from T. Dicoccoides to HRS Wheat	**$4,500**
Kianian, Shahryar Foley, Michael	USDA/ARS	Genetic and Molecular Investigations of Dormancy in Weed Seeds	**$67,328**
Lee, Chiwon	ND Agricultural Products Utilization Commission	Development of Guidelines for Growing and Handling Sprout Soybeans for Export Market	**$3,150**
Lym, Rodney Christoffers, Michael J. Messersmith, Calvin	USDA/CSREES	Invasive and Aggressive Weed Control with Subsequent Habitat Restoration in North Dakota	**$398,464**
McMullen, Michael	USDA/ARS	National Oat Germplasm Enhancement at NDSU	**$10,000**
McMullen, Michael	Pioneer Hi-Bred International, Inc.	Salary Support for Diego Vilaro	**$10,000**
McMullen, Michael	Quaker Oats	Oats Research and Development	**$41,500**
McMullen, Michael	Quaker Oats	Oats Research and Development	**$41,500**
Mergoum, Mohamed	Monsanto Company	Developing Roundup Ready Spring Wheat	**$50,907**
Mergoum, Mohamed	ND Wheat Commission	Hard Red Spring Wheat Breeding Program	**$7,500**
Mergoum, Mohamed Gudmestad, Neil - Plant Pathology Secor, Gary - Plant Pathology	USDA/ARS	Development of Hard Red Spring Wheat Cultivars Resistant to Scab, or Accelerated Development of Hard Red Spring Wheat Cultivars Resistant to FHB in North Dakota	**$73,171**
Mergoum, Mohamed	ND Wheat Commission	Efficient and Rapid Introgression of Valuable Traits into Adapted Hard Red Spring Wheats	**$8,820**

Ransom, Joel	NDSU Development Foundation	Changes Over Time in the Genetic Components for Yield of Hard Red Spring Wheat in North Dakota	**$960**
Schneiter, Albert Dahleen, Lynn	USDA/ARS	Isolation of Spike-Specific Promoter from Bowman Barley and Near-Isogenic Marker Lines	**$38,000**
Schneiter, Albert	Burlington Northern Santa Fe Foundation	Support of Spring Plant Breeding Research, Varietal Development, and Graduate Student Training	**$10,000**
Thompson, Asunta (Susie) Gudmestad, Neil - Plant Pathology Hatterman-Valenti, Harlene Secor, Gary - Plant Pathology	USDA/CSREES	Development of Multipurpose Potato Cultivars with Enhanced Quality, Disease and Pest Resistance - North Central Program	**$475,000**
Thompson, Asunta (Susie) Farnsworth, Bryce	Northern Plains Potato Growers Association	Potato Breeding and Cultivar Development for the Northern Plains Region	**$51,585**
Thompson, Asunta (Susie) Secor, Gary - Plant Pathology	Snack Food Association	Breeding and Varietal Trial Research	**$6,000**
Thompson, Asunta (Susie)	NDSU Development Foundation	Incubator for Virus Free Potato Seed	**$4,500**
Thompson, Asunta (Susie)	Northern Plains Potato Growers Association	Potato Breeding and Cultivar Development for the Northern Plains	**$50,000**
Thostenson, Andrew	EPA	Administration and Enhancement of Pesticide Applicator Training and Certification	**$45,300**
Zollinger, Richard Johnson, Burton	Northarvest Bean Growers Association	Optimizing Dry Bean Desiccants	**$30,000**
		Plant Sciences Total:	**$3,040,807**

Soil Science

Investigator(s)	Agency	Project Title	Awarded
Casey, Frank	NSF	Fate and Transport of an Endrocrine Disruptor in Soil Water Systems	**$128,151**
Enz, John	DOC	North Dakota Agricultural Weather Network (NDAWN) Weather Data and Information Dissemination System	**$270,000**

Enz, John	American Crystal Sugar Company	Operation and Maintenance of American Crystal Sugar Company Weather Stations as Part of NDAWN	**$4,757**
Giles, Joseph	Sugarbeet Research & Education Board of MN & ND	Sugarbeet Soil Management Research	**$57,400**
Goos, Robert Jay	ND Soybean Council	Screening Soybean Varieties for Resistance to Iron Deficiency Chlorosis	**$5,975**
Khan, Mohamed Bradley, Carl A - Plant Pathology	Sugarbeet Research & Education Board of MN & ND	Strategies to Manage Rhizomania in Sugar Beet	**$10,350**
Richardson, Jimmie	USDA/Natural Resources Conservation Service	Wet Soil Monitoring	**$2,500**
		Soil Science Total:	**$479,133**

Veterinary & Microbiological Sciences

Investigator(s)	Agency	Project Title	Awarded
Berry, Eugene	USDA/CSREES	Equipment Enhancement for Studying the Molecular Pathogenesis of Infectious Diseases	**$24,842**
Gibbs, Penelope	US Poultry and Egg Association/University of Georgia	Comparison of Several Adult and Embryo Challenge Methods for Avian Colibacillosis	**$8,976**
Logue, Catherine	USDA/CSREES	Microscope to Enhance Food Safety Research	**$37,000**
Logue, Catherine	DHHS/FDA	Understanding Antimicrobial Resistance in Campylobacter	**$40,000**
		Veterinary & Microbiological Sciences Total:	**$110,818**

Veterinary Diagnostic Services

Investigator(s)	Agency	Project Title	Awarded
Dyer, Neil	Midwest Poultry Consortium	Studies of Molecular Epidemiology of APV in Midwest US	**$7,000**
Dyer, Neil	DHHS/ND Department of Health	North Dakota Bioterrorism Preparedness	**$271,456**

Dyer, Neil Mostrom, Michelle Newell, Teresa Vincent, Lani	DHHS/CDC/ND Department of Health	Epidemiology and Laboratory Capacity for Infectious Diseases (West Nile Virus Surveillance)	**$30,000**
Mostrom, Michelle	USDA/ARS	Diagnostic Services for Vomitoxin (DON) in Wheat	**$82,566**
		Veterinary Diagnostic Services Total:	**$391,022**

Williston REC

Investigator(s)	Agency	Project Title	Awarded
Bergman, Jerald	ND State Water Commission	Nesson Valley Irrigated Research & Demonstration Irrigation Systems or Irrigation Research Site in Williams County	**$239,500**
Bergman, Jerald Riveland, Neil	ND Barley Council	Western North Dakota Malt Barley Program	**$13,000**
Bergman, Jerald Riveland, Neil	ND Oilseed Council	Quadris and Omega Fungicides for the Control of Alternaria Leaf Spot and Sclerotinia Head Rot in Safflower	**$5,000**
Riveland, Neil Stack, Robert - Plant Pathology	MN Wheat Research & Promotion Council	Variety Response to Common Root Rot in Wheat & Durum	**$2,000**
		Williston REC Total:	**$259,500**
		Extension and Experiment Station Total:	**$13,689,813**

Arts, Humanities, and Social Sciences

Communication

Investigator(s)	Agency	Project Title	Awarded
Okigbo, Charles Coolong, Neal - The Spectrum	Otto Bremer Foundation	Human Relations in Higher Education: The NDUS Diversity Project	**$44,000**
Pearson, Judy	NEH/ND Humanities Council	Lyceum of the Liberal Arts	**$8,500**
		Communication Total:	**$52,500**

Criminal Justice & Political Science

Investigator(s)	Agency	Project Title	Awarded
Thompson, Kevin	DOJ/ND Supreme Court	A Continuing Evaluation of the Juvenile Drug Court Program in North Dakota	$12,960
		Criminal Justice & Political Science Total:	**$12,960**

English

Investigator(s)	Agency	Project Title	Awarded
Birmingham, Elizabeth	NDSU Development Foundation	Grant Writing Partnership with Fargo Non-Profits	$5,000
		English Total:	**$5,000**

History/Religious Studies

Investigator(s)	Agency	Project Title	Awarded
Strom, Claire	ND Humanities Council	History of Fargo Project	$10,751
		History/Religious Studies Total:	**$10,751**

Sociology/Anthropology

Investigator(s)	Agency	Project Title	Awarded
Clark, Jeffrey Slator, Brian - Computer Science	NSF	Teaching With Immersive Virtual Archeology	$420,000
Clark, Jeffrey Slator, Brian - Computer Science	NSF	Advancing Visualization Projects Through the Use of High Performance Virtual Reality Systems	$81,102
Clark, Jeffrey Slator, Brian - Computer Science	White Earth Reservation Tribal Council	Native Dancer	$20,000
Clark, Jeffrey Slator, Brian - Computer Science	NSF	Advancing Visualization Projects Through the Use of High-Performance Virtual Reality Systems	$81,102
Corwin, Patricia	NDSU Development Foundation	Efficiency in Government	$10,000
		Sociology/Anthropology Total:	**$612,204**
		Arts, Humanities and Social Sciences Total:	**$693,415**

Business Administration

Business Administration

Investigator(s)	Agency	Project Title	Awarded
Leitch, Jay	Eide Bailly	Salary Support for Dr. Thomas Buckhoff	$20,000

Business Administration Total: $20,000

Business Administration Total: $20,000

Engineering and Architecture

Architecture & Landscape Architecture

Investigator(s)	Agency	Project Title	Awarded
Colliton, Dennis	DOT/ND Department of Transportation	Landscape Architecture Research and Enhancement for North Dakota Roadways	$61,688
Gleye, Paul	NDSU Development Foundation	Walter Booth College Excellence Fund	$5,000

Architecture & Landscape Architecture Total: $66,688

Construction Management & Engineering

Investigator(s)	Agency	Project Title	Awarded
Lin, Wei	EPA/Minnesota Pollution Control Agency/Red River Basin Commission	Moorhead Fargo Red River Main Stem Fecal Coliform/Turbidity Total Maximum Daily Load Project	$38,461
Padmanabhan, G. Cobb, Sharon - Group Decision Center Lin, Wei - Civil Engineering & Construction Pieri, Robert - Mechanical Engineering & Applied Mechanics	ONR/Turtle Mountain Community College	An Adaptive Systemic Initiative of Tribal Collaboration for Increasing Native American Participation in Mathematics, Science and Engineering	$6,732
Padmanabhan, G.	NASA/Turtle Mountain Community College	A Reservation Collaboration Initiative for Pre-College Excellence in Science, Technology, Engineering and Mathematics PACE/SMET	$39,682
Smith, Gary	Construction Industry Institute/UT Austin	Do It Right the First Time	$128,500

Construction Management & Engineering Total: $213,415

Electrical & Computer Engineering

Investigator(s)	Agency	Project Title	Awarded
Ewert, Daniel Green, Roger	Medtronic	Real Time Signal Acquisition and Analysis	**$8,000**
Green, Roger Glower, Jacob Jorgenson, Joel	NSF	Design Projects for the Disabled	**$19,309**
Jorgenson, Joel	NDSU Development Foundation	Marketing of Sounder Technology	**$10,000**
Jorgenson, Joel	United Defense LP	Survey of Sensor Systems for Vertical Launch Platforms	**$2,500**
Mitra, Joydeep Stuehm, Don Yuvarajan, Subbaraya	DOE/Bonneville Power Administration/Pacific Engineering Corporation	Verification of New Transformer Models for ATP/EMTP	**$60,000**
Nelson, Robert Jorgenson, Joel	John Deere	Effects of ESD and EMI on Real World Student Designs	**$10,000**
Nelson, Robert Jorgenson, Joel	Dakota Technologies, Inc.	EM Characterization of High Speed Subcircuits	**$2,020**
		Electrical & Computer Engineering Total:	**$111,829**

Industrial & Manufacturing Engineering

Investigator(s)	Agency	Project Title	Awarded
Bartlett, James	Integrity Windows, Inc	Troubleshooting and Upgrade of the Casement Line Drilling Machine	**$10,690**
Bilen-Green, Canan	SuperValu	Third Party Auditing for SuperValu	**$15,014**
Bilen-Green, Canan	SuperValu	Third Party Auditing for Superval	**$15,285**
Ebeling, Kenneth	DOEd/University of North Dakota	Development of Real-Time Online Engineering Labs	**$15,289**

Johnson, Jack Jorgenson, Joel - Electrical & Computer Engineering Kallmeyer, Alan - Mechanical Engineering & Applied Mechanics Keating, Patrick - Aerospace Studies Maleki, Reza Remus, Gregory - Military Science Wells, David	DOD/Applied Resources, Inc.	Target Launcher Design and Coating Study	**$35,000**
Johnson, Jack Kallmeyer, Alan - Mechanical Engineering & Applied Mechanics Wells, David	DOD/Applied Resources, Inc.	Target Launcher Design & Coating Study	**$14,452**

Industrial & Manufacturing Engineering Total: **$105,730**

Mechanical Engineering & Applied Mechanics

Investigator(s)	Agency	Project Title	Awarded
Danescu, Radu	Webb, Inc.	Testing Cyclone Water/Fuel Separator Prototype	**$2,506**
Kallmeyer, Alan		Elastic Plastic Finite Element Analysis of Small Notches for HCF Methods Assessment	**$4,700**
Kallmeyer, Alan Alimi, Mohammad Kellogg, Kenneth - Civil Engineering & Construction	NSF	Acquisition of High-Rate Loading and Damage Characterization Equipment for Advanced Materials Research and Education	**$41,250**
Kallmeyer, Alan	Sverdrup Technologies, Inc.	Analysis of Cumulative Damage Theories for Multiaxial Loadings in High Cycle Fatigue	**$15,000**
Mahinfalah, Mohammad Kallmeyer, Alan Kellogg, Kenneth - Civil Engineering & Construction Mahinfalah, Mohammad	NSF/University of Puerto Rico	Affordable Processing and Dynamic Characterization of Sandwich Composite Materials and Structures	**$69,329**
Mehta, Sudhir Enger, Kathy - Library Schnell, Carolyn - University Studies	Bush Foundation	Building a Caring Community of Leaders and Problem-Solvers (CCLP)	**$450,000**
Reitz, Wayne	NDUS/NASA EPSCoR	Understanding Material Properties of Cryoquenched Sheets in High Temperature Applications, NASA Collaborative/Student Research	**$6,400**

Reitz, Wayne Jorgenson, Joel - Electrical & Computer Engineering	DOE/ND Department of Commerce	Sunsetters Solar Race Car Development	**$2,500**
Wong, Shing Chung	NDUS/NASA EPSCoR	Modeling of Nanoscale Graphene-Reinforced Polymers and its Effect on Radiation Shielding	**$25,890**
Ziejewski, Mariusz	Affinity Soccer	Soccer Head Protection Research	**$20,254**

Mechanical Engineering & Applied Mechanics Total: **$637,829**

Transportation Technology Transfer Center

Investigator(s)	Agency	Project Title	Awarded
Andersen, Donald Peloubet, Francis - Civil Engineering & Construction	FHA/ND Department of Transportation	North Dakota Local Technical Assistance Program (LTAP)	**$240,000**

Transportation Technology Transfer Center Total: **$240,000**

Engineering and Architecture Total: **$1,375,491**

Human Development and Education

Child Development & Family Science

Investigator(s)	Agency	Project Title	Awarded
Deal, James	DHHS/NIH/University of Georgia	Dimensions of Personality in Parental Language	**$27,448**
Deal, James Hemberger, Kim	DOEd/PATH North Dakota	ND Parents Assistance and Supportive Schools (NDPASS) Parent as Teachers	**$126,316**
Hektner, Joel	DOEd/Richland County	21st Century Community Learning Center	**$10,500**
Randall, Brandy	DHHS/NIH/NIMH	Ethnicity, Gender, and Measuring Adolescent Depression	**$69,475**
Sanders, Gregory	PATH North Dakota	Research Support for PATH North Dakota	**$3,030**

Child Development & Family Science Total: **$236,769**

Education

Investigator(s)	Agency	Project Title	Awarded
Wageman, Justin J.	DOEd/NDUS	North Dakota Curriculum Initiative	**$121,572**
		Education Total:	**$121,572**

Health, Nutrition, and Exercise Sciences

Investigator(s)	Agency	Project Title	Awarded
Barnhart, Thomas	National Youth Sports Corporation	Girls Sports Clinic	**$6,460**
Barnhart, Thomas	DHHS/National Youth Sports Program Fund	National Youth Sports Program 2003	**$61,566**
Rhee, Yeong Brunt, Ardith	ND Oilseed Council	Effects of Flaxseed on Reducing Risk of Diabetes and Cardiovascular Disease Development in Individuals with Impaired Glucose Tolerance	**$8,916**
Strand, Bradford	Concordia College	Athletic Training Graduate Assistant	**$5,700**
		Health, Nutrition, and Exercise Sciences Total:	**$82,642**

Human Development and Education Total: **$440,983**

Pharmacy

Dean's Office: Pharmacy

Investigator(s)	Agency	Project Title	Awarded
Peterson, Charles Christensen, Thomas - Pharmacy Practice	DHHS/HRSA/OAT	Implementing Telepharmacy in North Dakota: Saving Rural Pharmacies From Closing	**$579,000**
Peterson, Charles	MeritCare Medical Center	Pharmacy Administration Faculty Position	**$95,228**
Peterson, Charles	Blue Cross/Blue Shield of North Dakota	Pharmacy Administration Faculty Position	**$31,648**

Peterson, Charles	St. Alexius Medical Center	Comprehensive Clinical Pharmacy Teaching Program	**$49,500**
Peterson, Charles	Otto Bremer Foundation	College of Pharmacy Native American Pharmacy Program	**$20,000**
Peterson, Charles	DHHS/HRSA/OAT	OAT Special Project	**$15,000**
Peterson, Charles	Lake Region Hospital & Nursing Home	Clinical Pharmacy Residency Program	**$8,434**
		Dean Office: Pharmacy Total:	**$798,810**

Pharmaceutical Sciences

Investigator(s)	Agency	Project Title	Awarded
Singh, Jagdish	DHHS/NIH/NICHD	Field Induced Pores Formation During Iontophoresis	**$70,500**
Wagner, John	Fraternal Order of Eagles	Synaptic Plasticity in Aged Rats	**$0**
Wagner, John	DHHS/NIH/NIDA	Cocaine-Induced Metaplasticity in the Hippocampus	**$141,000**
		Pharmaceutical Sciences Total:	**$211,500**

Pharmacy Practice

Investigator(s)	Agency	Project Title	Awarded
Strandberg, Kenneth	Dakota Medical Foundation, Cass County Social Services, City of Fargo	Non-Prescription Drug Aids for Area Immigrants	**$3,000**
		Pharmacy Practice Total:	**$3,000**
		Pharmacy Total:	**$1,013,310**

Science and Mathematics

Biological Sciences

Investigator(s)	Agency	Project Title	Awarded
Anderson, Marc	USDA/CSREES	Changes in Gene Expression During Acclimation to Low Temperature in Maize Seedings	**$74,934**
Butler, Malcolm Hanson, Mark	MN Department of Natural Resources	Testing the Efficacy of Buffers for Protecting Aquatic Invertebrates in Seasonal Ponds	**$16,000**
Butler, Malcolm	USDA/Forest Service	Testing Efficacy of Buffers for Protecting Aquatic Invertebrates in Seasonal Ponds, or Assessing the Use of Seasonal Wetlands by Aquatic Invertebrates in the Third and Fourth Years After Harvest of the Surrounding Forest	**$20,000**
Clark, Mark	EPA/University of North Dakota	Mark Clark Salary and Fringe Benefits	**$50,000**
Jaskowiak, Megan Fawley, Marvin Phillips Fawley, Karen	EPA/ND Department of Health	Nutrient Criteria Pilot Project for the Sheyenne River	**$48,200**
Sheridan, Mark	NSF	REU Supplement: Differential Expression of Somatostatin Receptors in Rainbow Trout	**$14,125**
Stewart, Mary	DHHS/NIH/NIGMS	Functional Analysis of Bys During Drosophila Development	**$139,360**
Stockwell, Craig	DOD	Conserving Integral Units of Chihuahuan Desert Biodiversity Phase III	**$134,784**
White, Alan	DOE	The Role of the CELC Gene Product in Cellulose Synthesis by a Tumefaciens	**$62,000**
White, Alan	DOEd	Fund for the Improvement of Post-Secondary Education	**$126,948**
		Biological Sciences Total:	**$686,351**

Center for Science & Mathematics

Investigator(s)	Agency	Project Title	Awarded
Martin, William	NSF	NDSU CoMSTeP (Supplement Funding Request)	**$4,500**
Schwert, Donald Saini-Eidukat, Berhhardt - Geosciences Slator, Brian - Computer Science	DOEd	Comprehensive Program	**$91,987**

Schwert, Donald	DOEd/NDUS	North Dakota Master Science Teacher Project (ND-MSTEP)	**$71,565**
		Center for Science & Mathematics Total:	**$168,052**

Chemistry

Investigator(s)	Agency	Project Title	Awarded
Jacobson, Denley Stolzenberg, Gary	DHHS/Turtle Mountain Community College	Improvement of North Dakota Tribal College Chemistry Instruction	**$55,856**
Mallik, Sanku	DOD/Dakota Technologies	Development of Fluorescent Liposomes to Detect Biological Toxins Using Fluoresence Resonance Energy Transfer	**$41,992**
Page, Michael	DOD/ONR	Quantum Chemical Dynamics of Key Steps for Understanding Mechanisms Responsible for Initiation/Detonation of Energetic Materials	**$77,000**
Sibi, Mukund	DHHS/NIH/NIGMS	Acyclic Stereocontrol in Radical Reactions	**$225,600**
Sibi, Mukund Balaz, Stefan - Pharmaceutical Sciences Cook, Gregory Mallik, Sanku Rodgers, Kenton Sehgal, Inder - Pharmaceutical Sciences	DHHS/NIH/NCRR	New Strategies for Targeting Protease in Diseases	**$1,545,163**
Sibi, Mukund	NSF	Enantioselective Synthesis of B Amino Acids	**$136,000**
Sibi, Mukund	Merck Research Labs	Enantioselective Synthesis of B Amino Acids	**$20,000**
Sun, Wenfang	ND Public Service Commission	Synthesis and Characterization of Transition Metal Arylacetylene Dendrimers for Nonlinear Optical Applications	**$35,000**
Tallman, Dennis	Naval Air Warfare Center	PPV Coating Systems Measurements	**$31,920**
		Chemistry Total:	**$2,168,531**

Geosciences

Investigator(s)	Agency	Project Title	Awarded
Ashworth, Allan	NSF	Terrestrial Paleoecology and Sedimentary Environment of the Meyer Desert Formation, Beardmore Glacier, Transantarctic Mountains	$100,692
		Geosciences Total:	**$100,692**

Mathematics

Investigator(s)	Agency	Project Title	Awarded
Comez, Dogan Martin, William Schwert, Donald - Center for Science & Mathematics	NSF	Graduate Student-University-School Collaborative for Science, Mathematics (GraSUS)	$252,855
Hass, Lonnie	ND Council on the Arts	Development of Governor's School for the Arts	$5,000
Hass, Lonnie	Xcel Energy Foundation	Contribution to Governor's School Program	$1,000
Hass, Lonnie	ND Department of Public Instruction	2003 North Dakota Governor's Schools in Business Entrepreneurship	$132,597
Kornfeld, Isaac	NSF	Topics in Measurable Dynamics of Group Actions	$44,999
Staley, Karen Horton	NSA/Association for Women in Mathematics	Sonia Kovalevsky Day	$2,703
		Mathematics Total:	**$439,154**

Physics

Investigator(s)	Agency	Project Title	Awarded
Denton, Alan	NSF	Theoretical and Computational Studies of Macromolecular Materials	$264,000
Swenson, Orven	NSF/Dakota Technologies Inc.	Novel Ultrasensitive Gas Chromatography (GC) Detector with Highly Specific Response to Aromatic Hydrocarbons	$60,947
		Physics Total:	**$324,947**

Polymers & Coatings

Investigator(s)	Agency	Project Title	Awarded
Bierwagen, Gordon	U.S. Air Force	Development of Test Methods, Materials and Formulations for Long Lifetime Cr-Free Coatings for Aircraft	**$967,000**
Croll, Stuart Gelling, Victoria Johnston	U.S. Air Force/University of Minnesota	Flake Filled Primers or MURI-01 Reactive Nanoengineered Coatings	**$68,998**
Gelling, Victoria Johnston Bierwagen, Gordon Croll, Stuart	Reactive Surfaces, Ltd	To Determine the Durability of Paint Containing RSL Additive and the Durability of the RSL Additive in Paint	**$30,000**
Gelling, Victoria Johnston	Technology Applications Group, Inc.	Galvanic Corrosion Studies of Magnesium Coupled with Cd/Steel	**$7,092**
Huo, Qun	NSF	Gold Nanoparticles with Single Copy of Functional Groups - Synthesis and Study	**$99,984**
		Polymers & Coatings Total:	**$1,173,074**

Psychology

Investigator(s)	Agency	Project Title	Awarded
Blakeslee, Barbara McCourt, Mark	DHHS/NIH/NEI	Spatial & Temporal Interactions in Brightness Perception	**$169,220**
Hinsz, Verlin	DHHS/NIH/NIMH	Metacognition in Groups Answering Mental Health Questions	**$141,000**
Hinsz, Verlin	DOD/AFOSR	Modeling Memory Processes and Performance Benchmarks of AWACS Weapons Director Teams	**$159,064**
McCaul, Kevin	DHHS/NIH/NCI	Cancer Worry and Health Protective Behaviors	**$102,798**
Miltenberger, Raymond	NDSU Development Foundation	Teaching Safety Skills to Young Children to Prevent Firearm Injuries	**$10,000**
Nawrot, Mark	DHHS/NIH/NEI	Eye Movements in the Perception of Depth from Motion	**$61,572**
O'Neill, Katherine Youngs, George - Sociology/Anthropology	Otto Bremer Foundation/Tri-College University/Red River Basin Institute	Community Perceptions and Values Related to a Floodplain Identity in the Red River Basin	**$48,433**
		Psychology Total:	**$692,087**

Statistics

Investigator(s)	Agency	Project Title	Awarded
Rao, M.B.	Merck Research Labs	Sample Size Determination Problems in Non-Linear Regression	$5,000

Statistics Total: $5,000

Science and Mathematics Total: $5,757,888

University Miscellaneous Offices

Information Technology Services

Investigator(s)	Agency	Project Title	Awarded
French, Jody	DOEd/ND Department of Public Instruction	EduTech Support for Tetradata	$27,907

Information Technology Services Total: $27,907

ND EPSCoR

Investigator(s)	Agency	Project Title	Awarded
Sheridan, Mark	NSF	Advancing Science Excellence in North Dakota	$2,000,000
Sheridan, Mark	DHHS/University of North Dakota	ND BRIN - Year 2	$1,055,057

ND EPSCoR Total: $3,055,057

ND Water Resources Research Institute

Investigator(s)	Agency	Project Title	Awarded
Padmanabhan, G. Cobb, Sharon - Group Decision Center Lin, Wei - Civil Engineering & Construction Pieri, Robert - Mechanical Engineering & Applied Mechanics	ONR/Turtle Mountain Community College	An Adaptive Systemic Initiative of Tribal Collaboration for Increasing Native American Participation in Mathematics, Science and Engineering	$118,431

ND Water Resources Research Institute Total: $118,431

Office of the President/Athletics

Investigator(s)	Agency	Project Title	Awarded
Woken, Scott Taylor, Jessica - Athletics VanderHagen, Scott - Athletics	Dakota Medical Foundation	Pulsed Shortwave Diathermy and its Application in Sports Medicine	**$4,000**
		Office of the President/Athletics Total:	**$4,000**

Student Health Service

Investigator(s)	Agency	Project Title	Awarded
Lonbaken, Barbara	DHHS/CDC/ND Department of Health/Fargo Cass Public Health	NDSU Community Tobacco Plan	**$35,000**
Lonbaken, Barbara	Dakota Medical Foundation	Healthy Life Students' Self-Care Guide	**$1,845**
Lonbaken, Barbara	NDSU Development Foundation	HealthyLife Students' Self-Care Guide	**$988**
		Student Health Service Total:	**$37,833**

VP Agricultural Affairs/Institute for Business & Industry Development

Investigator(s)	Agency	Project Title	Awarded
Eide, Wallace	USDA/CSREES	Regional Center for Rural Development in North Dakota	**$182,976**
Eide, Wallace	DOC	NDSU-IBID University Center	**$75,000**
		VP Agricultural Affairs/IBID Total:	**$257,976**

Office of the President's/ND Forest Service

Investigator(s)	Agency	Project Title	Awarded
Berg, Thomas	USDA/Forest Service	FY 2002 UDSA-FS Rural Development Fuel Reduction	**$100,000**
Berg, Thomas	Red River Regional Council	FY03 Red River Riparian Project	**$63,557**
Bird, Jackson	USDA/Forest Service	FY 2002 USDA-FS Tribal Projects - Title 4	**$50,000**

Bird, Jackson	DOT/ND Department of Transportation	FY 2003 Community Transportation Enhancement Program	**$130,000**
Claeys, Thomas	ND Division of Emergency Management	FEMA Hazard Mitigation - Living Snow Fences	**$434,634**
Claeys, Thomas	USDA/Forest Service	FY 03 USDA-FS Field Support and Ozone Bioindicator Data Collection	**$6,500**
Claeys, Thomas	DOT/ND Department of Transportation	FY 2003 TE Living Snow Fences	**$16,000**
Kotchman, Larry	USDA/Forest Service	FY 2002 Conservation Reserve Program	**$578**
Kotchman, Larry	USDA/Forest Service	FY 2001 Conservation Reserve Program	**$19,414**
Kotchman, Larry	USDA/Forest Service	Consolidated Payment Grants for Cooperative Forestry Assistance FY 2003	**$1,311,000**
Santucci, Michael	USDA/Forest Service	FY 2002 USDA-FS Economic Action and Recovery	**$100,000**
Santucci, Michael	DOI/Fish & Wildlife Service	FY 2003 USFWS Rural Fire Assistance	**$74,438**

Office of the President/ND Forest Service Total: **$2,306,121**

VP Research, Creative Activities, & Technology Transfer/CATTT

Investigator(s)	Agency	Project Title	Awarded
McCarthy, Gregory	DOEd	Technology Based Industry Traineeships - Phase 3	**$350,000**

VP RCATT/CATTT Total: **$350,000**

VP Research, Creative Activities, & Technology Transfer/CNSE

Investigator(s)	Agency	Project Title	Awarded
Grier, Dean Boudjouk, Philip - VP RCATT Grier, Dean Ready, Thomas	DOD/DMEA	Synthesis and Characterization of Ferromagnetic Materials with Spintronic	**$499,999**

McCarthy, Gregory	DOD/DMEA	Center for Excellence for Microsensors and Their Fabrication with NanoBlock and Fluidic Self-Assembly Technology - Phase 2	**$9,500,000**
McCarthy, Gregory	DOD/DMEA	Chameleon (Low-Observable Surveillance) Network Technology Base Program - Phase I	**$632,000**
McCarthy, Gregory Bierwagen, Gordon - Polymers & Coatings Croll, Stuart - Polymers & Coatings Gelling, Victoria Johnston - Polymers & Coatings Green, Roger - Electrical & Computer Engineering Tallman, Dennis - Chemistry		Durable Hybrid Coatings for Aircraft Systems	**$1,500,625**
McCarthy, Gregory Webster, Dean - Polymers & Coatings	DOD/ONR	Advanced Marine Coatings for Naval Vessels Phase II - Antifouling and Fouling Release Coatings for Naval Vessels Phase II	**$4,580,000**
		VP RCATT/CNSE Total:	**$16,712,624**

VP Research, Creative Activities & Technology Transfer

Investigator(s)	Agency	Project Title	Awarded
Neas, Bonnie Deckard, Edward - Plant Sciences	NSF	First Virtual Conference on Genomics and Bioinformatics	**$29,913**
Neas, Bonnie	GSA	Center for High Performance Computing (CHPC)	**$1,490,250**
		VP Research, Creative Activities & Technology Transfer Total:	**$1,520,163**

VP Student Affairs/TRIO Programs

Investigator(s)	Agency	Project Title	Awarded
Kostecki, Allyn	DOEd	Student Support Services	**$388,231**
Kostecki, Allyn	DOEd	Upward Bound (High School)	**$230,204**
Modin, Kay	DOEd	Ronald E. McNair Post Baccalaureate Achievement Program	**$247,458**
Steele, Bruce	DOEd	Veterans Upward Bound	**$265,319**
		VP Student Affairs/TRIO Programs Total:	**$1,131,212**

University Miscellaneous Offices Total: **$25,521,324**

Upper Great Plains Transportation Institute

Upper Great Plains Transportation Institute

Investigator(s)	Agency	Project Title	Awarded
Benson, Douglas	USDA/AMS	Regional and Shortline Railroad Information and Analysis - Year 4	**$80,000**
Benson, Douglas	ND Department of Transportation	Transportation Telecommunications Network (TEL8)	**$152,100**
Bitzan, John	DOT/Federal Railroad Administration	Costing Individual Railroad Movements or Examination and Assessment of Alternative Approaches in Developing Cost Estimates for Individual Railroad Freight Movements	**$65,473**
Bitzan, John	DOT	An Evaluation of the Pricing Behavior of Airlines Operating in Small and Medium Sized Communities	**$147,000**
Jacobson, Dennis	DOT/ND Department of Transportation	North Dakota Department of Transportation Support Center	**$380,000**
Lantz, Brenda	ND Highway Patrol	Development of Query Central	**$400,000**
Lantz, Brenda	DOT/Computer Science Corporation	Analyzing the Use of Traffic Conviction Data - Phase III	**$111,390**
Smadi, Ayman Birst, Shawn	MN Department of Transportation	Evaluating Traffic Operations Strategies in Alexandria	**$10,552**
Tolliver, Denver	DOT	Mountain Plains Consortium Program Plan - Year 4	**$474,162**
Vachal, Kimberly	Burlington Northern Railroad Association	Regional Grain Movement Database	**$11,144**
Vachal, Kimberly	Red River Valley and Western Railroad	Regional Grain Movement Database	**$4,179**
Vachal, Kimberly	DOT/Bureau of Transportation Statistics	Transportation Quality Indices in Analysis of Non-Metropolitan Economies	**$56,000**

Upper Great Plains Transportation Institute Total: **$1,892,000**

Upper Great Plains Transportation Institute Total: **$1,892,000**

University Total: **$50,417,930**

A

Aakre, Dwight,25
Agribusiness & Applied Economics,24
Agricultural & Biosystems Engineering,25
Agricultural Administration,26
Agricultural Communications,27
Ali, Shaukat,36,37
Alimi, Mohammad,50
Andersen, Donald,51
Anderson, Leif,35
Anderson, Marc,54
Anderson, Vern,29
Animal & Range Sciences,24,27
Architecture & Landscape Architecture,48
Ashley, Roger,32
Ashworth, Allan,56

B

Balaz, Stefan,55
Barker, William,27
Barnhart, Thomas,52
Bartlett, James,49
Bartoszuk, Karin,32
Bauer, Marc,27,28,29,31
Benson, Douglas,62
Berg, Paul,28
Berg, Thomas,59
Bergman, Jerald,46
Berry, Eugene,45
Berzonsky, William,40
Bierwagen, Gordon,57,61
Bilen-Green, Canan,49
Biller, Cheryl,38
Biological Sciences,54
Bird, Jackson,59,60
Birmingham, Elizabeth,47
Birst, Shawn,62
Bitzan, John,62
Blakeslee, Barbara,57

B

Boetel, Mark A.,32,33
Boudjouk, Philip,60
Bradley, Carl A,37,45
Bresnahan, Gail,41
Brewer, Gary,33
Brotherson, Sean,32
Brummond, Brad,34
Brunt, Ardith,52
Business Administration,48
Butler, Malcolm,54

C

Cai, Xiwen,40
Carena, Marcelo J.,40
Carr, Patrick,32
Carrington REC,29
Carter, Jack,40
Casey, Frank,44
Caton, Joel,27,29
Center for 4-H Youth Development,30
Center for Science & Mathematics,54
Cereal & Food Sciences,30
Chakraborty, Monisha,30
Chang, Sam K.C.,30
Charlet, Laurence,33,37
Chemistry,55
Child Development & Family Science,32,51
Christensen, Thomas,52
Christoffers, Michael J.,43
Ciernia, Mark,41
Claeys, Thomas,60
Clark, Jeffrey,47
Clark, Mark,54
Cobb, Sharon,48,58
Colliton, Dennis,48
Comez, Dogan,56
Communication,46
Construction Management & Engineering,48

C

Cook, Gregory,55
Coolong, Neal,46
Corwin, Patricia,47
Courneya, Louis Joseph,30
Criminal Justice & Political Science,47
Croll, Stuart,57,61

D

Dahleen, Lynn,44
Dai, Wenhao David,41
Danescu, Radu,50
Deal, James,51
Dean's Office: Pharmacy,52
Deckard, Edward,61
Del Rio Mendoza, Luis,37
Denton, Alan,56
Dexter, Alan,41
Dickinson REC,32
Dyer, Neil,45,46

E

Ebeling, Kenneth,49
Education,52
Eide, Wallace,59
Electrical & Computer Engineering,49
Elias, Elias,40,41,43
Endres, Gregory,29
Enger, Kathy,50
English,47
Entomology,32
Enz, John,27,44,45
Eriksmoen, Eric,29
Ewert, Daniel,49
Extension - off campus,34
Extension Administration,34
Extension County Programs,34

F

Faller, Timothy,35
Farnsworth, Bryce,44
Fauske, Gerald,33
Fawley, Marvin,54
Fisher, Jay,36
Flage, Lynette,34
Foley, Michael,43
Foster, Stephen,33
Fox, Sheri,25
Franckowiak, Jerome,41,42
Freeman, Thomas,37
French, Jody,58

G

Garden Robinson, Julie,35
Gelling, Victoria Johnston,57,61
Geosciences,56
Gibbs, Penelope,45
Giles, Joseph,45
Gillispie, Mary Alice,25
Gleye, Paul,48
Glogoza, Phillip,33
Glower, Jacob,49
Goos, Robert Jay,42,45
Grafton, Kenneth,26,41
Grazul-Bilska, Anna,27
Green, Roger,49,61
Greenland, Richard,26
Grier, Dean,60
Gudmestad, Neil,37,38,39,43,44
Gustafson, Cole,24

H

Hall, Clifford,30
Halley, Scott,35,36,37
Halvorson, Mark,29,36
Hammond, James,41

H

Hanson, Bryan,29,42
Hanson, Mark,54
Hanson, Tom,36
Harris, Marion,33
Hass, Lonnie,56
Hatterman-Valenti, Harlene,26,41,42,44
Hauck, Duane,34
Health, Nutrition, and Exercise Sciences,35,52
Hektner, Joel,51
Hellevang, Kenneth,25,26,27
Helms, Ted,42
Hemberger, Kim,51
Henson, Robert,29,30,37,41
Hettinger REC,35
Hinsz, Verlin,57
History/Religious Studies,47
Hofman, Vernon,26
Holes-Dickson, Barbara,35
Horsley, Richard,42
Huo, Qun,57
Hvidsten, Marie,34

I

Industrial & Manufacturing Engineering,49
Information Technology Services,58

J

Jacobson, Denley,55
Jacobson, Dennis,62
Jaskowiak, Megan,54
Jenks, Brian,36
Jensen, Patricia,26
Johnson, Burton,42,44
Johnson, Jack,50
Jorgenson, Joel,49,50,51

K

Kallmeyer, Alan,50
Keating, Patrick,50
Kegode, George,42
Kellogg, Kenneth,50
Khan, Khalil,31
Khan, Mohamed,41,45
Kianian, Shahryar,42,43
Kirby, Donald,27,28
Knodel, Janet,33
Koch, Becky,27
Koo, Won,24
Kornfeld, Isaac,56
Kostecki, Allyn,61
Kotchman, Larry,60

L

Lafta, Abbas,41
Langdon REC,35
Lantz, Brenda,62
Lardy, Greg,27,28,29,35
Lee, Chiwon,43
Leistritz, F. Larry,24
Leitch, Jay,48
Lin, Wei,48,58
Logue, Catherine,45
Lonbaken, Barbara,59
Lougheed, Margaret,24
Lukach, John,35
Lym, Rodney,43

M

Maher, George,34
Mahinfalah, Mohammad,50
Maleki, Reza,50
Mallik, Sanku,55
Manthey, Frank,43
Marchello, Martin,29,35

M

Markegard, Brian,32
Martin, William,54,56
Mathematics,56
McCarthy, Gregory,60,61
McCaul, Kevin,57
McClean, Phil,42
McCourt, Mark,57
McKay, Kent,29,36
McMullen, Marcia,37,38
McMullen, Michael,43
Mechanical Engineering & Applied Mechanics,50
Mehta, Sudhir,50
Mergoum, Mohamed,40,43
Messersmith, Calvin,43
Metzger, Steve,29
Miltenberger, Raymond,57
Mitra, Joydeep,49
Modin, Kay,61
Moore, Bert,28
Mostrom, Michelle,46

N

Nawrot, Mark,57
ND EPSCoR,58
ND Water Resources Research Institute,58
Neas, Bonnie,61
Neate, Stephen,38,39,42
Nelson, Berlin,39
Nelson, James,32
Nelson, Robert,49
Nelson, William,24
Newell, Teresa,46
North Central REC,36
Nowatzki, John,26,37
Nudell, Dan,35

O

Office of the President/Athletics,59
Office of the President/ND Forest Service,59
Okigbo, Charles,46
Olson, David D,24
Olson, Denise,27,33
Olson, Kay,25
Olson, Truman,31
O'Neill, Katherine,57
Ottmar, Garry,32

P

Padmanabhan, G.,48,58
Page, Michael,55
Park, Chung,28,29
Pearson, Judy,46
Peloubet, Francis,51
Peterson, Charles,52,53
Peterson, Harvey,34
Peterson, Lisa,28
Pharmaceutical Sciences,53
Pharmacy Practice,53
Phillips Fawley, Karen,54
Physics,56
Pieri, Robert,48,58
Plant Pathology,36
Plant Sciences,40
Pleban, Frank,32
Polymers & Coatings,57
Psychology,57

R

Randall, Brandy,51
Ransom, Joel,43,44
Rao, M.B.,58
Rasmussen, Jack,39
Rathge, Richard,25
Ready, Thomas,60
Redmer, Dale,28,29

R

Reitz, Wayne,50,51
Remus, Gregory,50
Reynolds, Lawrence,27,28,29
Rhee, Yeong,52
Richardson, Jimmie,27,45
Rider, David,27,33
Ringwall, Kris,30
Riveland, Neil,39,46
Rodgers, Kenton,55
Ross, James,25

S

Saini-Eidukat, Berhhardt,54
Sanders, Gregory,51
Santucci, Michael,60
Schatz, Blaine,29,30,35
Scherer, Thomas,26
Schneiter, Albert,41,44
Schnell, Carolyn,50
Schroeder, J.W.,29
Schwarz, Paul,31
Schwert, Donald,54,55,56
Secor, Gary,37,38,39,43,44
Sedivec, Kevin,27,28
Seelig, Bruce,26
Sehgal, Inder,55
Sheridan, Mark,27,54,58
Sibi, Mukund,55
Singh, Jagdish,53
Slator, Brian,47,54
Smadi, Ayman,62
Smith, Gary,48
Sociology/Anthropology,47
Soil Science,44
Stack, Robert,46
Staley, Karen Horton,56
Statistics,58
Statler, Glen,39

S

Steele, Bruce,61
Steele, Dean,26,41
Stewart, Mary,54
Stockwell, Craig,54
Stoltenow, Charles,28,35
Stolzenberg, Gary,55
Strand, Bradford,52
Strandberg, Kenneth,53
Strom, Claire,47
Student Health Service,59
Stuehm, Don,49
Sturn, Gerald,34
Sun, Wenfang,55
Swank, James,26
Swenson, Andrew,25
Swenson, Orven,56

T

Tallman, Dennis,55,61
Taylor, Jessica,59
Theurer, Debra,34
Thompson, Asunta (Susie),41,44
Thompson, Kevin,47
Thostenson, Andrew,44
Tolliver, Denver,62
Transportation Technology Transfer Center,51
Tweeten, Kathleen,25
Tweten, Margaret,35

U

Upper Great Plains Transportation Institute,62

V

Vachal, Kimberly,62
VanderHagen, Scott,59
Veterinary & Microbiological Sciences,45

V

Veterinary Diagnostic Services,45
Vettern, Rachelle,30
Vincent, Lani,46
VP Agricultural Affairs/IBID,59
VP Research, Creative Activities & Technology Transfer,60
VP Student Affairs/TRIO Programs,60
VP Research, Creative Activities & Technology Transfer/CATTT,61
VP Research, Creative Activities & Technology Transfer/CNSE,61

W

Wachenheim, Cheryl,24
Wageman, Justin J.,52
Wagner, John,53
Webster, Dean,61
Weiland, John,39
Wells, David,50
White, Alan,54
Wilhelm, Anissa,35
Williston REC,46
Wilson, William,25
Woken, Scott,59
Wolf-Hall, Charlene,30,31
Wong, Shing Chung,51

Y

Youngs, George,57
Yuvarajan, Subbaraya,49

Z

Ziejewski, Mariusz,51
Zollinger, Richard,44
Zotz, Karen,30
Zwinger, Steve,32