

RESEARCH AND DEVELOPMENT

UNIVERSITY OF MARYLAND, BALTIMORE



ANNUAL REPORT 2003



UNIVERSITY OF MARYLAND
Research and Development

Fall 2003

Dear UMB Campus Community:

It is with great pleasure that we announce the University of Maryland, Baltimore's, extramural funding awards success for Fiscal Year 2003. Our faculty have collaborated and competed, served and trained, and worked from the bench to the clinic, in our neighborhoods and public schools with resources provided by more than 1,200 sponsors of academic projects. These efforts have resulted in more than \$324 million in awards to the campus in FY03, up from \$305 million last year and up \$100 million from just five years ago. We congratulate and credit the leadership, faculty, and staff of the campus for this success.

Given our growing research enterprise, UMB will further strengthen the components of its mission by establishing a biotech park. Breaking ground in early December, the first 120,000 square foot building in the privately developed West Baltimore Street Park will be a home for faculty start-up companies and for industry collaborators. Given that 98 percent of UMB's award activity is in the life sciences and health care research fields, and more than \$43 million in awards this year are corporate sponsored, this park project will further enhance and encourage collaboration between UMB faculty and the biomedical industry.

Our projects, awards, and achievements are highly valued. The pressures of the current fiscal condition dictate that we must continue to accelerate our rapidly expanding research and development activities. We look forward to your continued excellence and leadership in these efforts.

Sincerely,

A handwritten signature in black ink that reads "David Ramsay".

David J. Ramsay
President

A handwritten signature in black ink that reads "Jim Hughes".

James L. Hughes
Vice President
Research and Development

RESEARCH AND DEVELOPMENT AT THE
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FISCAL YEAR 2003 ANNUAL REPORT

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RESEARCH AND DEVELOPMENT AT THE
 UNIVERSITY OF MARYLAND, BALTIMORE
 FISCAL YEAR 2003 ANNUAL REPORT

EXTRAMURAL FUNDING AT UMB—OVERVIEW

The University of Maryland, Baltimore, is experiencing continued growth in extramural funding, reaching **\$324 million in FY03**. This total includes \$265 million in grants and contracts processed through the Office of Research and Development (a detailed report follows) and \$58.3 million in extramural dollars from the UMB Foundation, the School of Medicine’s Endowment, and the Veterans Administration. Award dollar values have tripled in the last eight years and are up from FY02’s \$305 million. These awards and gifts fund hundreds of UMB faculty research, service, and training endeavors. Foundation and endowment gifts support unfunded and intramural research projects, seed new programs, and support the research infrastructure of our campus.

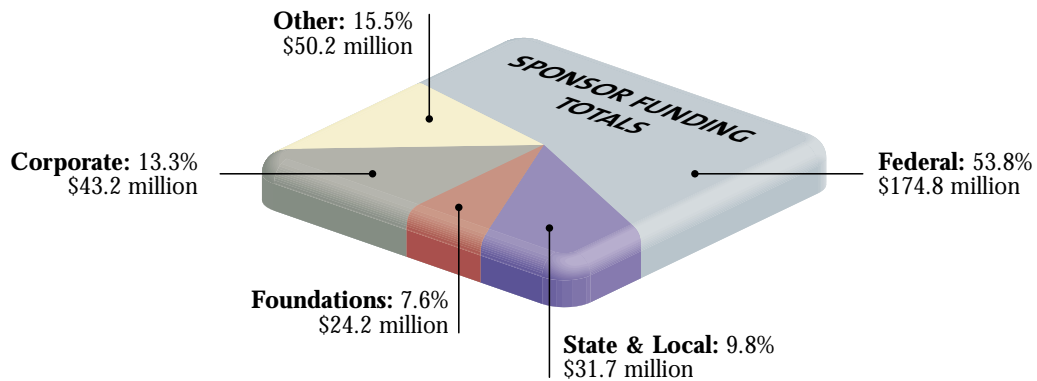
The FY03 total, \$324,132,532, includes:

Awards processed through ORD	\$265.7 million
UMB Foundation	\$30.5 million
School of Medicine Endowment	\$7.8 million
Veterans Affairs Awards	\$20.0 million

Forty percent of the award values (\$106.7 million) received in FY03 are derived from NIH.

These funding totals are derived from a variety of sponsors as illustrated below:

TOTAL EXTRAMURAL FUNDING—FY03



More than 100 corporate sponsors provided \$43 million in extramural funding to the campus this year.

* Other = universities, hospitals, non profit organizations

A detailed summary of extramural funding, by school, is listed below:

SUMMARY OF EXTRAMURAL FUNDING, BY SCHOOL – FY03

School	Amount Awarded through ORD	UMB Foundation, VA, and Medicine Endowment	Total FY03	Percent Increase over FY02	Percent of Total
Dental	\$13,763,329	\$1,182,930	\$14,946,259	32%	5%
Law	\$1,137,953	\$6,832,473	\$7,970,426	176%	2%
Medicine	\$223,023,601	\$46,781,500	\$269,805,101	5%	83%
Nursing	\$7,593,342	\$2,086,606	\$9,679,948	5%	3%
Pharmacy	\$8,935,986	\$315,721	\$9,251,707	-17%	3%
Social Work	\$8,883,326	\$338,713	\$9,222,039	-2%	3%
Campus Admin.	\$2,292,972	\$894,080	\$3,187,052	-28%	1%
Graduate	\$70,000	\$0	\$70,000	100%	
TOTAL	\$265,700,509	\$58,432,023	\$324,132,532		100%

For the first time, UMB's extramural funding total in FY03 (\$324 million) **exceeded** that of any other University System of Maryland campus, including the University of Maryland College Park (\$315 million).

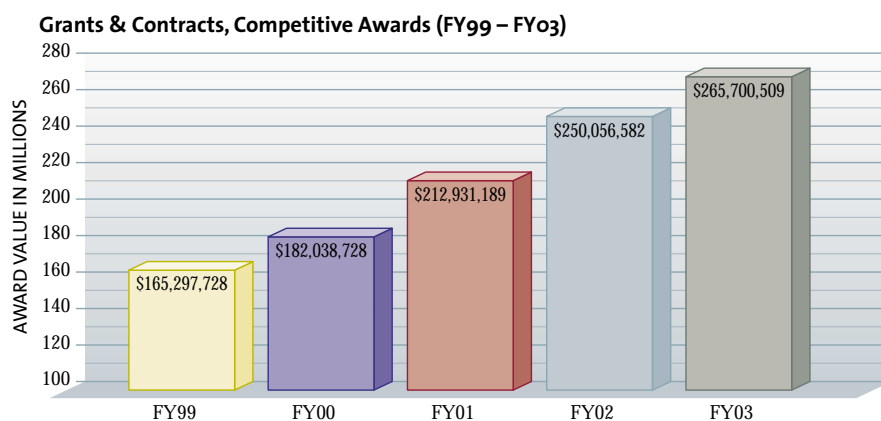
Following is a detailed report of UMB's grants and contracts activity for the Fiscal Year.

OFFICE RESEARCH AND DEVELOPMENT — FY03

REPORT OF GRANTS AND CONTRACTS

SUMMARY

More than 1,200 UMB principal investigators (PIs) in 75 departments are pursuing grants and contracts to support their work. The Office of Research and Development (ORD) serves these efforts, working with UMB's PIs to find funding and submit proposals, and with sponsors, negotiating contracts and agreements. In FY03, these collaborative efforts resulted in the award to faculty of **\$265 million** in projects for research, service, and training. This represents a 6% increase over FY02 totals and a rise in award values of \$100 million since FY99, an overall growth of 61%.



The number of awards processed through ORD has increased by 42% since FY93.

(Note: ORD counts only the dollar amount of the award applicable in FY03, not continuing year amounts.)

AWARD ACTIVITY

In FY03, 1,669 complex and collaborative faculty projects were funded by more than 1,200 government, foundation, university, and corporate sources. Taking a pause in its five-year growth trend, the number of awards dropped by only four last year, but the average award value grew by 7% in FY03 and has grown by 28% since FY99. Indirect cost recovery, at 21.36%, dropped slightly last year. Applications for awards continue to increase in number and complexity. Note trends below:

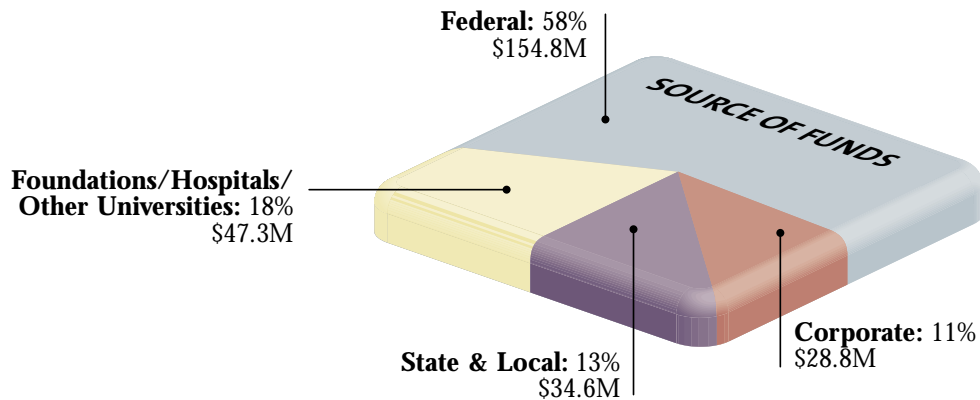
GRANT APPLICATIONS AND AWARDS ACTIVITY FY99 – FY03

Year	Applications	Awards	\$ Amount	Direct	Indirect	% IDC
FY 99	1845	1325	\$165,297,728	\$134,414,138	\$30,883,590	22.98%
FY 00	2017	1451	\$182,038,206	\$148,745,134	\$33,293,072	22.38%
FY 01	2115	1597	\$212,931,189	\$174,869,951	\$38,061,238	21.77%
FY 02	2274	1673	\$250,056,582	\$203,618,096	\$46,438,486	22.80%
FY 03	2345	1669	\$265,700,509	\$218,937,478	\$46,763,031	21.36%

AWARD SOURCES

Federal sources contribute 58% of the total dollar value of awards in FY03, a percentage that has remained constant for 10 years, whereas award values continue to rise. The Department of Health and Human Services contributed 88% of all federally funded projects. Non-profits, foundations, hospitals and other universities contribute 18% of the FY03 total. State and local governments continue to provide a significant source of funds and corporations remain critical partners in the work of the campus.

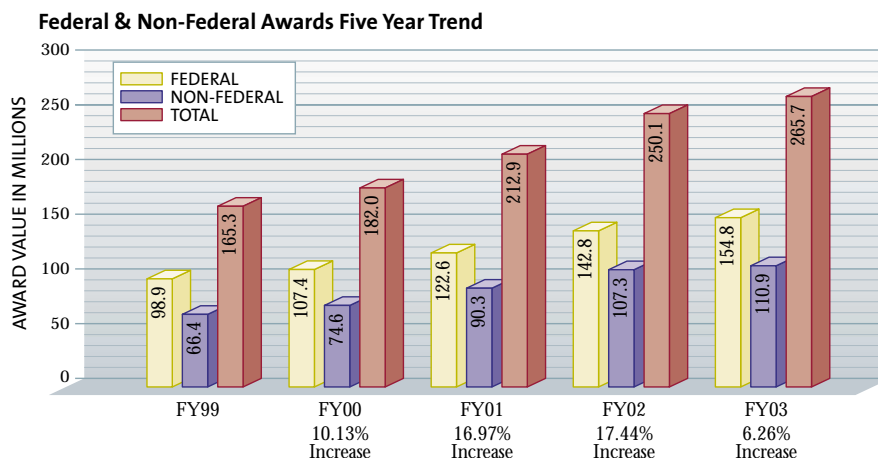
FY03 DOLLAR AMOUNTS BY MAJOR CONTRIBUTING SOURCE



A PERSPECTIVE ON AWARDS BY SOURCE – FY01-FY03

SOURCE	FY01 AMOUNT	FY02 AMOUNT	FY03 AMOUNT
Federal Agencies	\$122,588,076	\$142,794,337	\$154,846,820
State of Maryland	\$21,260,539	\$30,191,427	\$30,938,832
City and Local Government	\$4,014,351	\$4,396,728	\$3,787,947
Corporations	\$29,230,798	\$29,260,760	\$28,790,758
Foundations, Universities, Hospitals	\$36,097,145	\$43,413,330	\$47,336,152
Total	\$213,190,909	\$250,056,582	\$265,700,509

Since FY99, federal award values have risen 57% and non-federal sources (State and local governments, corporations, foundations, hospitals, and other universities) have risen 67%.



See detail of all government sources, by agency, in Appendix A.

See detail of NIH and other federal sources, by school, in Appendix B.

Professional Development for Research Administrators and Faculty

Grants and Contracts staff work closely with faculty, administrators, and funding sponsors to realize successful projects. Interactive training sessions were held throughout the year with faculty, one-on-one and at staff meetings, at survival skills seminars, Research Administrators Committee (RAC) meetings, and mentoring sessions.

A team of representatives from ORD, Restricted Funds, and RAC developed and initiated a 10-session curriculum named: Guide to the Administration of Sponsored Projects. One session is held each month and is designed to parallel the workflow of a proposal and award. The courses provide information and resources that will ultimately allow the UMB's Research Administrators to work with increased effectiveness and will improve compliance with UMB and sponsor requirements.

The NIH conducted its Regional Workshop on sponsored projects administration in Baltimore in June. The 3-day event was hosted by UMB and trained more than 400 university faculty and administrators from all over the United States, Canada, and Europe.

Top Five Federal Awards

- 1** Donald Wilson, MD, MACP, Dean, School of Medicine **\$11,923,194**

A five-year NIH, National Center for Research Resources award
 To support UMB's General Clinical Research Center, one of a national network of 78 centers that provide optimal settings for medical investigators to conduct safe, controlled, state-of-the-art, in-patient and out-patient studies of both children and adults.
- 2** Alan Shuldiner, MD, School of Medicine, Department of Medicine **\$10,616,360**

A new four-year NIH, National Heart, Lung and Blood Institute award
 To identify genes that interact with the environment in shaping the risk of cardiovascular disease.
- 3** Andrew Goldberg, MD, School of Medicine, Department of Medicine **\$7,396,788**

A five-year NIH, National Institute on Aging award
 A center grant in support of research and research training related to gerontology and geriatrics with a focus on heart disease in older Americans.
- 4** Terry B. Rogers, PhD, School of Medicine, Department of Biochemistry and Molecular Biology **\$7,112,065**

A new five-year NIH, National Heart, Lung and Blood Institute award
 To provide new information on the fundamental molecular themes that link mechanical stress to local cellular signaling and cytoskeletonopathies that underlie human heart disease.
- 5** Joel Greenspan, PhD, Dental School, Department of Biomedical Sciences **\$5,194,617**

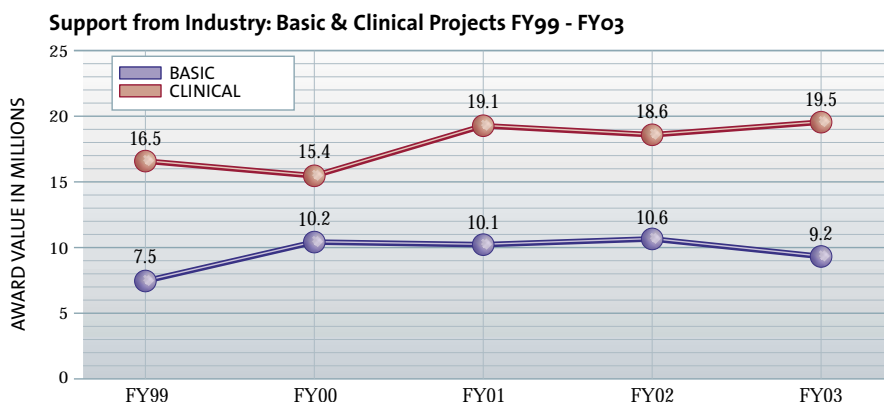
A new five-year NIH, National Institute of Arthritis and Musculoskeletal and Skin Diseases award
 To establish a Specialized Center of Research devoted to the study of the mechanisms of chronic or persistent pain.

PROFILE

UMB: SUPPORT FROM INDUSTRY

UMB is positioned to collaborate effectively with industry partners in support of both basic and clinical research and human and animal trials and studies. In FY03, **\$43 million** in corporate projects were received. Of this, \$28.7 million was awarded to UMB faculty through the ORD, and an additional \$14.4 million was received by UMBF from corporate sponsors.

UMB's biotech park project, beginning with a 120,000 square foot, privately financed wet lab and office building adjacent to the UMB campus, is expected to draw additional life sciences companies and opportunities to the campus.



Leading corporate sponsors at UMB in FY03:

- Novartis
- GlaxoSmithKline
- Maxygen
- Cubist Pharma
- Aventis Pasteur

Clinical trials comprise a large percentage of the corporate activity with \$19.5 million in FY03, yielding nearly \$89 million since FY99. Of the 271 trials awarded in FY03, most involved oncology, heart disease, and HIV-related studies.

CLINICAL TRIALS FROM PRIVATE INDUSTRY FY98 – FY03

Percent Increase	Year	Awards	Direct	Indirect	Total	Percent IDC
--	FY98	261	\$ 12,400,776	\$ 2,317,098	\$ 14,717,874	18.69%
12%	FY99	254	\$ 13,816,367	\$ 2,675,634	\$ 16,492,001	19.36%
-7%	FY00	215	\$ 12,761,038	\$ 2,621,385	\$ 15,382,423	20.54%
24%	FY01	257	\$ 16,170,222	\$ 2,937,578	\$ 19,107,800	18.17%
-2%	FY02	283	\$ 15,393,867	\$ 3,247,738	\$ 18,641,605	21.09%
5%	FY03	271	\$ 16,026,561	\$ 3,475,147	\$ 19,501,708	21.68%

ORD continues to pursue Master Agreements with corporations to streamline clinical trial study contracting for the Center for Clinical Trials and all UMB faculty. In FY03, Master Clinical Study Agreements were negotiated with Novartis Pharmaceuticals and Merck and Co., Inc. These companies will fund a number of independent studies over the next few years.

More than 100 companies have engaged UMB faculty in projects, an impressive list of major bio/pharmaceutical firms.

Maryland companies working with UMB faculty include:

Guilford Pharmaceuticals, Inc.
Human Genome Sciences
Intradigm Corporation
MedImmune Incorporated
Osiris
Otsuka America Pharmaceutical
Shire Laboratories

The Maryland Industrial Partnership Program (MIPS), which partners faculty experts with industry, awarded Dr. James Mixson (Pathology) a grant to collaborate with Intradigm Corporation.

Other bio-pharma industry leaders sponsoring projects in FY03 include:

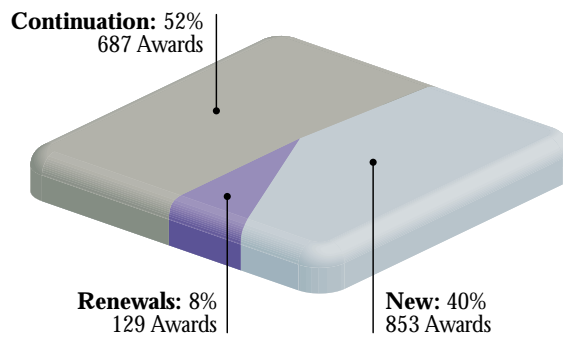
Alza Corporation	Dupont Merck Pharmaceutical Co.	Osiris
Abbott Laboratories	Dynamic Science Incorporated	Otsuka America Pharmaceutical
Acorda	Eli Lilly Research Labs	Parallax Medical, Inc.
Acorn Cardiovascular, Inc.	Fujisawa USA Incorporated	Pfizer Incorporated
Agouron Pharmaceuticals	G.D. Searle & Company	Pharmacia & Upjohn Company
Amgen Incorporated	Genentech Incorporated	Phillips Medical, Inc.
AstraZeneca LP	Genzyme Corporation	PPD Pharmaco Incorporated
Aventis Pasteur SA	Gilead Sciences	Procter and Gamble Company
Aviron	Glaxo Smith Kline	QLT Photo Therapeutics
Balance Pharmaceuticals	Guidant, Inc	Rhone Poulenc
Baxter Healthcare Corporation	Hoffman-LaRoche, Inc.	Roche Diagnostics/BMC
Bayer, AG	IDEC	Saliva Diagnostic Systems, Inc.
BD Diagnostics	ILEX	Sanofi-Synthelabo Research
Becton Dickinson	Immunex Clinical Development	Schering Corporation
Berlex Laboratories	Johnson & Johnson	Scios Nova Incorporated
Biogen Research Corporation	Kowa Company	Searle Laboratories
BioRad Laboratories	Kyowa Pharmaceuticals, Inc.	Sepracor Incorporated
Boehringer Ingelheim	LifeScan, Inc.	Shire Laboratories
Boston Life Sciences, Inc.	Ligand Pharmaceuticals, Inc.	Solvay Pharmaceuticals
Boston Scientific Corporation	Maxygen	Takeda Chemical Industries, Ltd.
Bristol-Myers Squibb	MDS Nordion	Teva Pharmaceutical Industries
Cambridge Antibody Technology	MedImmune Incorporated	Titan Pharmaceuticals
Celsion Corporation	Medtronic Incorporated	Trinity Biotech
Centocor, Inc.	Merck	U.S. Biomaterials Corporation
Cephalon	Nabi Biopharmaceuticals	Valentis Incorporated
Concentric Medical, Inc.	NitroSci Pharmaceuticals	Vion Pharmaceuticals
COR Therapeutics, Inc.	Novartis Pharma AG	Warner Lambert
Corgentech	Novartis/Ciba-Geigy Corp.	Wyeth
Coulter Pharmaceuticals	Novo Vascular, Inc.	Watson Laboratories
Cubist Pharmaceuticals	Omnicare Clinical Research	Wellstat Therapeutics, Inc.
DePuy Orthopaedics, Inc.	Organon Sanofi-Synthelabo LLC	Yamanouchi Pharmaceutical, Ltd.
	Ortho Biotech Incorporated	

Although not included in dollar totals, agreements for biological materials transfers with industry are also increasing in number. UMB executed 131 incoming and 47 outgoing MTA's in FY03. Seventy-six were with industry, 67 with universities, a high percentage of which have third-party industry licensed materials. ORD is encouraging corporate sponsors to execute collaboration and research agreements for more than mere material transfers, thus encouraging a greater trend toward collaboration with industry.

AWARDS BY TYPE

Of all the awards received by UMB, 40% are brand new, never before submitted competitive applications, 8% represents renewal of pre-existing, ongoing projects and 52% reflects the long-term, non-competing awards.

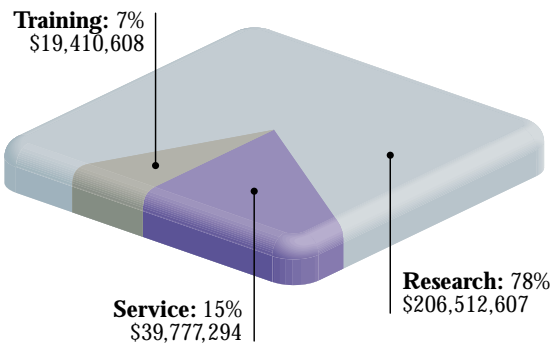
FY03 AWARDS



See Appendix C for more detail.

Research awards contribute \$206 million or 78% toward the FY03 total. Service agreements yield \$40 million in dollar value and training is supported with nearly \$20 million in projects.

FY03 AWARDS



See Appendix D for more detail.

SUCCESS BY SCHOOL

FY03 continues a growth trend in dollar value of awards. The School of Medicine awards constitute 84% of all project totals. The Dental School saw a 27% increase in award values in '03 and the School of Law made impressive gains with a 10% rise in project dollars. Awards to the schools of nursing and social work continue to climb, and the School of Pharmacy saw an increase in federal awards, although their overall numbers were affected by slight decreases in funds from state and local governments as well as corporate sponsors. Collaboration among faculty in different schools and departments on applications and awards continues to increase. In summarizing success by school, the following figures allocate the entire award to the school of the primary investigator.

GRANT AND CONTRACT AWARDS BY SCHOOL

Schools	FY02	FY03	Percent Increase 02-03
Dental	\$10,036,801	\$13,763,329	27%
Law	\$1,019,378	\$1,137,953	12%
Medicine	\$211,541,049	\$223,023,601	5%
Nursing	\$6,883,308	\$7,593,342	10%
Pharmacy	\$9,759,187	\$8,935,986	-8%
Social Work	\$8,750,812	\$8,883,326	2%
Campus Admin./Graduate Studies	\$2,066,047	\$2,362,972	14%
Totals	\$250,056,582	\$265,700,509	6.26%

The direct and indirect costs related to each school for FY03 follows:

DIRECT & INDIRECT COSTS FOR AWARDS BY SCHOOL FOR FY03

Schools	# of Awards	Total Amount Awarded	Direct Cost	Indirect Costs	Percent Ind./Dir.
Dental	86	\$ 13,763,329	\$ 10,376,598	\$ 3,386,731	32.64%
Law	25	\$ 1,137,953	\$ 1,080,740	\$ 57,213	5.29%
Medicine	1341	\$ 223,023,601	\$ 183,943,038	\$ 39,080,563	21.25%
Nursing	78	\$ 7,593,342	\$ 6,200,070	\$ 1,393,272	22.47%
Pharmacy	91	\$ 8,935,986	\$ 7,101,579	\$ 1,834,407	25.83%
Social Work	41	\$ 8,883,326	\$ 8,196,156	\$ 687,170	8.38%
Campus Administration	6	\$ 2,292,972	\$ 1,980,057	\$ 312,915	15.80%
Graduate Studies	1	\$ 70,000	\$ 59,240	\$ 10,760	18.16%
TOTAL	1673	\$ 265,700,509	\$ 218,937,478	\$ 46,763,031	21.36%

The following pages summarize each school's success in FY03.

Refer to Appendix E for a detailed summary of all awards, by department and Appendix F for a summary of success rates, by school.

DENTAL SCHOOL AT A GLANCE

\$ 13,763,329

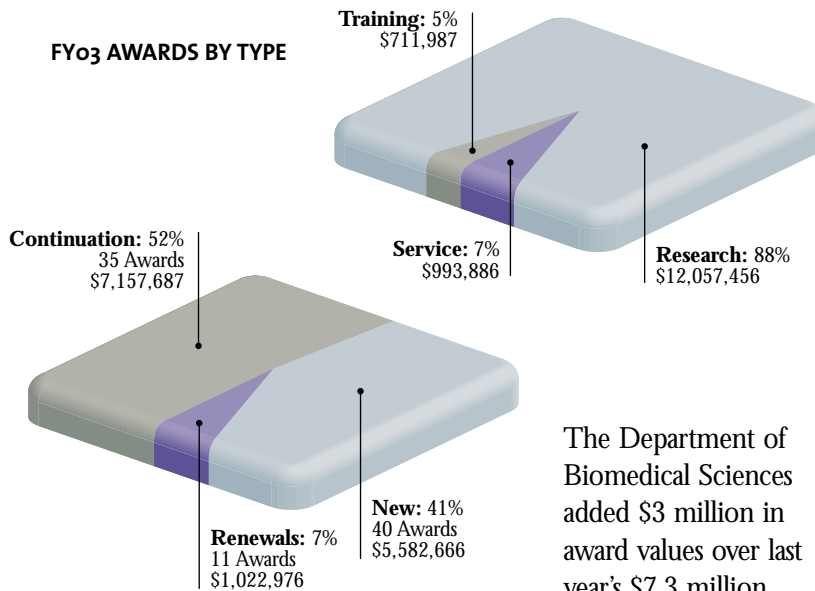
Award Highlights

Joel Greenspan, PhD, received a five-year award of \$5,194,607 to establish a specialized center of research to examine the physiological mechanisms associated with sex differences in chronic or persistent pain.

The National Institute of Allergy and Infectious Diseases will support a four-year grant of \$1,274,876 to **Patrik Bavoil, PhD**, to gain understanding of chlamydia phage biology in the context of chlamydial infection toward the development of genetic methodologies.

The National Cancer Institute will continue four-year funding of \$971,190 for the work of **Leslie Costello, PhD**, to study the pathogenesis of prostate cancer and the malignant process, specifically establishing the mechanisms by which zinc regulates m-aconitase activity.

Dean Dessen, PhD, received an instrumentation grant of \$489,236 from the NIH to purchase a confocal microscope.

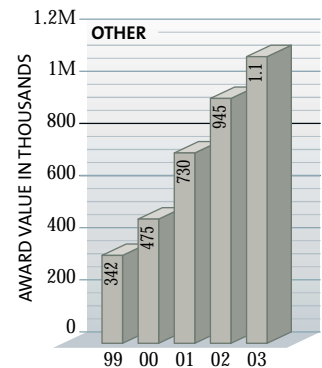
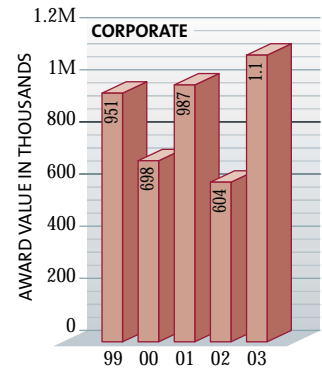
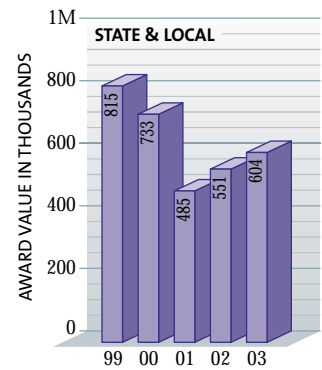
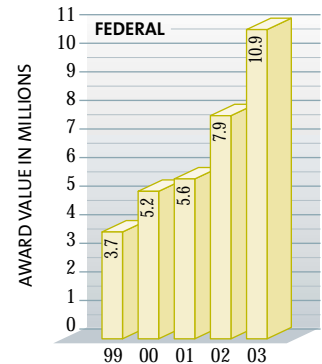


The Department of Biomedical Sciences added \$3 million in award values over last year's \$7.3 million

FACTS

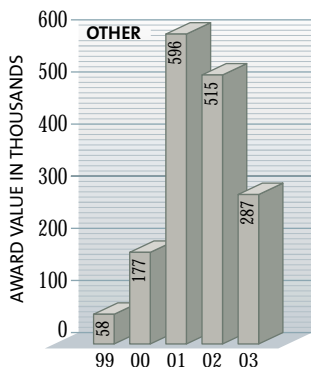
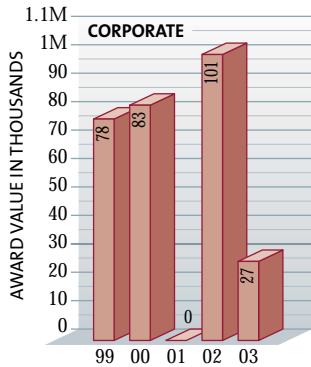
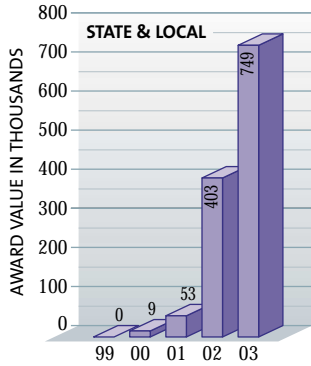
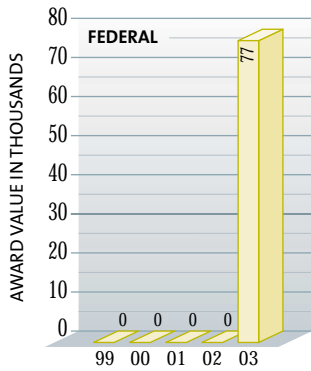
Percent increase in dollar value over FY02 total	Number of awards	10.5 million in DHHS awards of which NIH supports	Increase in dollar amount of awards over FY99
27%	86	\$7.1 million	143%

Five-Year Trend in Award Value

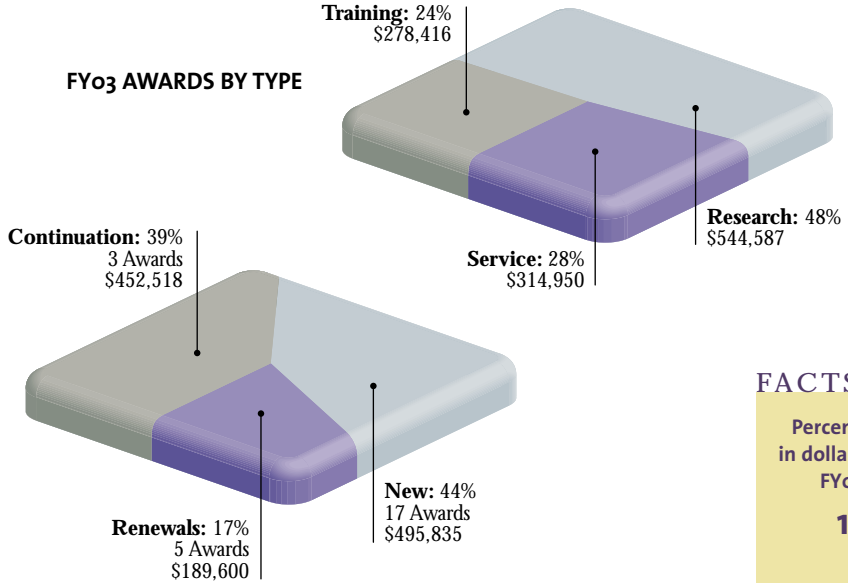


SCHOOL OF LAW AT A GLANCE \$ 1,137,953

Five-Year Trend in Award Value



FY03 AWARDS BY TYPE



FACTS

Percent increase in dollar value over FY02 total
12%

Number of awards
25

Increase in dollar amount of awards over FY99
737%

Award Highlights

Roger Wolf, JD, will conduct a collaborative program among the Maryland Department of Education, the Maryland Mediation and Conflict Resolution Office, and the UMB's Dispute Resolution Center. The \$50,000 grant monies will be used to provide grants for innovative conflict resolution projects to public primary and secondary Maryland schools.

Michael Greenberger, JD, received \$121,211 in training resources from a Maryland Emergency Management Agency contract to develop and run a series of workshops on developing "continuity of operations plans" for all state agencies and local governments.

Diane Hoffmann, JD, received an award from the U.S. Department of Energy to conduct a workshop on the public policy and ethical questions that will confront the biotechnology industry over the next five years. Specifically, this \$20,000 grant will support a workshop on the Microbial Genome Program.

A one-year, \$50,000 service contract was awarded to **Michael Greenberger, JD**, by the Department of Health and Mental Hygiene (DHMH) in support of the UMB Center for Health and Homeland Security. The center will serve as a liaison between DHMH and UMB on matters related to bioterrorism and crisis and consequences management, providing consultation, information, and research assistance.

SCHOOL OF MEDICINE
 AT A GLANCE
 \$ 223,023,601

Award Highlights

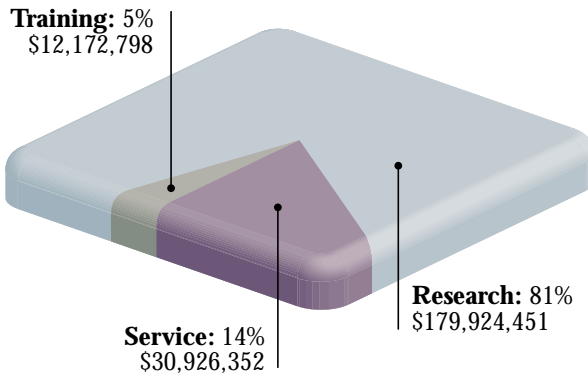
Alan Shuldiner, MD, was awarded a four-year \$10,616,360 from NIH for a project entitled: *Genome-Wide Search for CVD Gene-Environmental Interactions*. He will identify genes that interact with the environment in shaping the risk of cardiovascular disease. Four short-term interventions will be performed in 1,000 members of the Amish Family Calcification Study.

Marc Hochberg, MD, received \$7,222,336 from the NIH to develop a longitudinal human subject cohort to characterize the natural history of the onset and progression of osteoarthritis in a generalized population. This is a seven-year joint project with the Johns Hopkins School of Medicine.

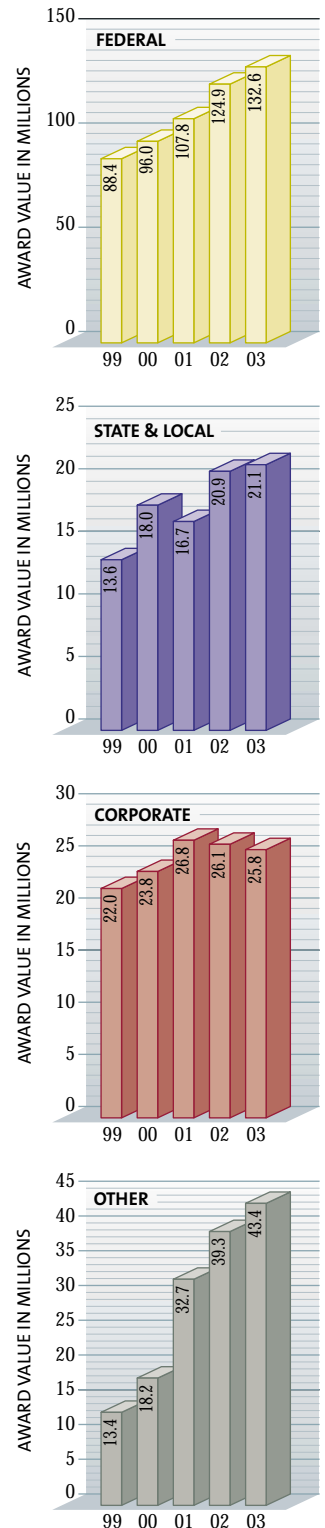
Terry Rogers, PhD, received a five-year \$9,112,065 NIH award for a program entitled: *Local Signals and Macromolecules Architecture in the Heart*. The program will study the role of signal transduction and the cytoskeleton in the development of dilated cardiomyopathies.

Laure Aurelian, PhD, received a five-year NIH research grant of \$1,767,338 to investigate the apoptotic activity of H11 in skin melanocytes and melanoma as it relates to the development of novel gene therapies. *(Award Highlights continued on next page.)*

FY03 AWARDS BY TYPE

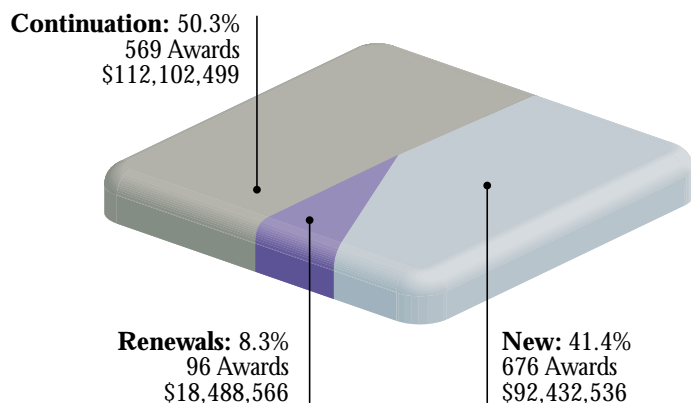


Five-Year Trend in Award Value



SCHOOL OF MEDICINE (CONTINUED)

FY03 AWARDS BY TYPE



Michael Naslund, MD, was awarded a five-year \$2,385,000 NIH research grant to establish a cooperative group of 10 prostate evaluation and treatment centers nationwide for determining whether Saw Palmetto and/or *Pygeum Africanum* can prevent the clinical progression of benign prostatic hyperplasia.

Myron M. Levine, MD, DTPH, received \$1,902,571 from GlaxoSmithKline for a new 21-month research contract that will support surveillance for invasive pneumococcal disease in Chilean children in Santiago.

Paul A. Welling, MD, was awarded a new five-year research grant of \$1,744,875 by the National Institute of Diabetes and Digestive and Kidney Diseases. This project is aimed at elucidating how potassium channels in the kidney are targeted and retained at particular membrane domains.

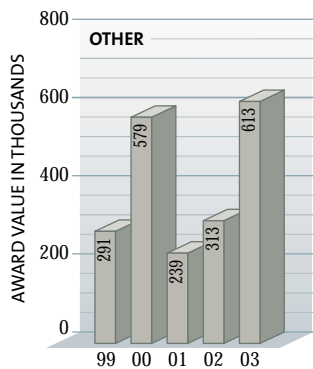
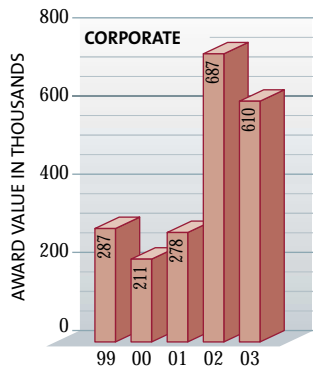
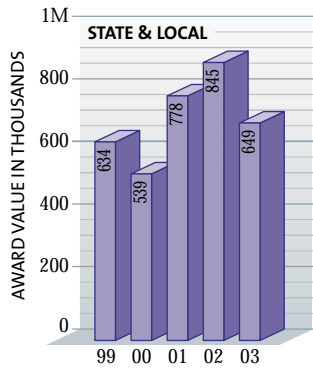
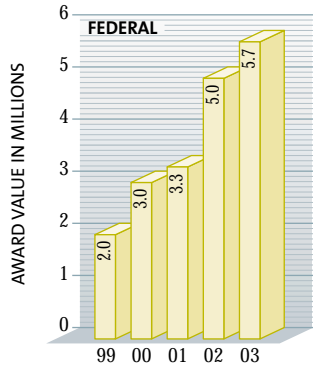
Thomas MacVittie, PhD, received a one-year research contract for \$1,790,228 from the Naval Medical Research Center. This will support the development of an optimal protocol for *ex vivo* expansion of human hematopoietic adult bone marrow stem cells using the U.S. Navy’s proprietary human brain microvascular endothelial cell (HuBEC) culture system.

FACTS

Percent increase in dollar value over FY02 total 5%	Number of awards 1,341	\$115 million in DHHS awards of which NIH supports \$93 million	Increase in dollar amount of awards over FY99 62%
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SCHOOL OF NURSING AT A GLANCE \$ 7,593,342

Five-Year Trend in Award Value



Award Highlights

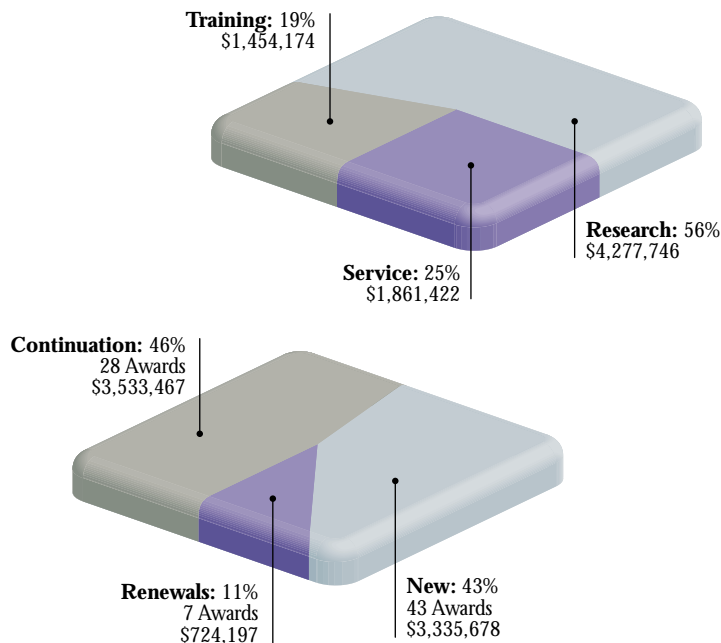
Sally Tom, EDM, CNM, FACNM, received funding from the Health Resources and Services Administration for \$290,120 to continue the state's only nurse-midwifery education program.

Barbara Resnick, PhD, CNRD, was awarded a five-year grant of \$3,147,694 from the National Institute on Aging. Funds will support a study to test the feasibility of an integrated restorative care program implemented in long-term care facilities. **Jay Magaziner, PhD**, School of Medicine is the co-PI on the project.

Jane A. Lipscomb, PhD, was awarded \$2,506,354 over five years from the National Institute for Occupational Safety and Health (NIOSH) to conduct an assessment of risk factors for violence and the occurrence of violence in social service workplaces. Monies will also support implementation of comprehensive violence prevention programs in these workplaces.

Alison Trinkoff, ScD, received a four-year NIOSH grant award of \$965,663 funding a comprehensive study on the health impact of extended work hour arrangements for nurses. Survey data of 3,500 actively licensed RNs in two states will be evaluated.

FY03 AWARDS BY TYPE



FACTS

Percent increase in dollar value over FY02 total

10%

Number of awards

78

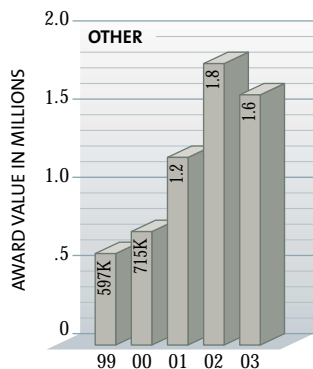
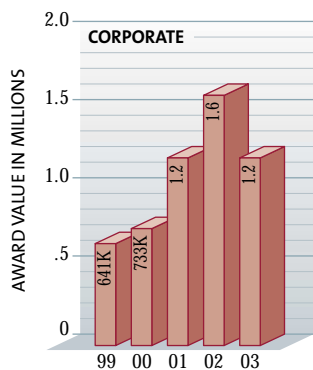
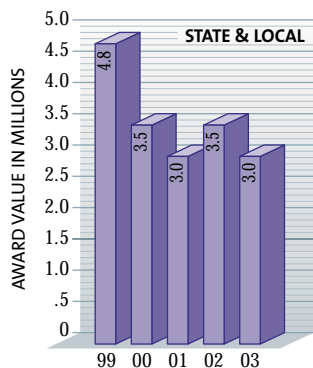
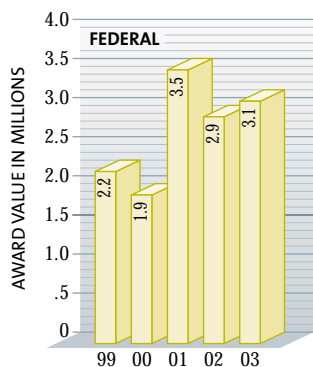
\$4.8 million in DHHS awards of which NIH supports **\$1.6 million**

Increase in dollar amount of awards over FY99

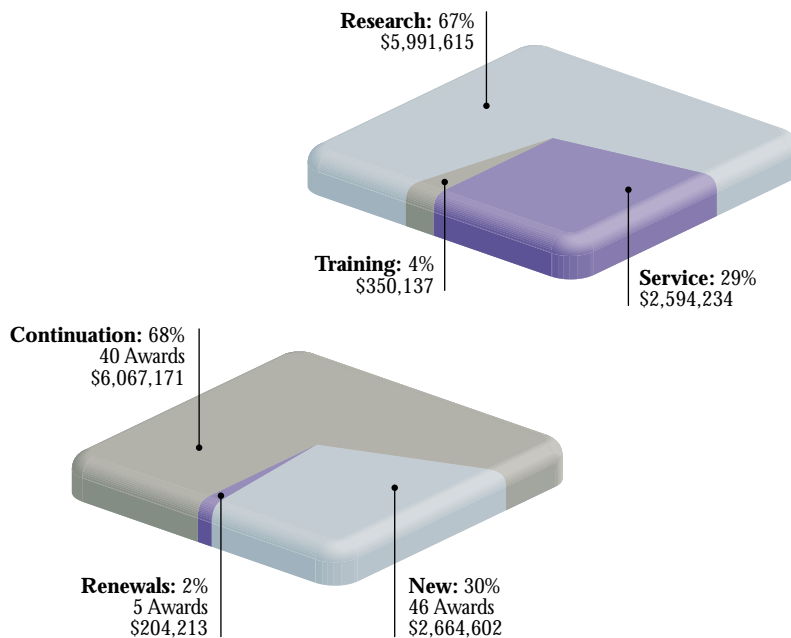
148%

SCHOOL OF PHARMACY AT A GLANCE \$ 8,935,986

Five-Year Trend in Award Value



FY03 AWARDS BY TYPE



Award Highlights

Alexander MacKerell, PhD, will use a three-year \$703,599 award from the National Cancer Institute to study compounds that inhibit the p56lck SH2 domain toward the development of novel immunosuppressant drugs.

Magaly Rodriguez de Bittner, PharmD, received a three-year award of \$272,823 from Giant Food for the development, implementation, clinical coordination, and evaluation of disease state management programs for Giant's patient care programs and pharmacies.

Jim Polli, PhD, will receive a one-year research grant of \$50,000 from Shire Laboratories to perform pharmacokinetic analysis of intestinal drug permeability.

Anthony Tommasello, MS, PhD, received a two-year research grant of \$399,538 from the Robert Wood Johnson Foundation to create and evaluate pharmacy continuing education programming on the implementation of the Drug Addiction Treatment Act.

FACTS

Number of awards

91

\$2.7 million in DHHS awards of which NIH supports

\$1.9 million

Increase in dollar amount of awards over FY99

8%

SCHOOL OF SOCIAL WORK

AT A GLANCE

\$ 8,883,326

Award Highlights

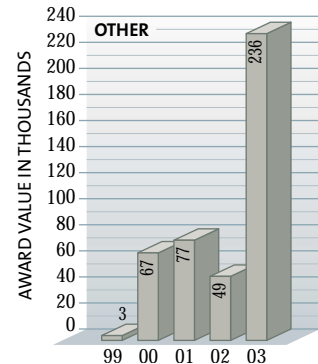
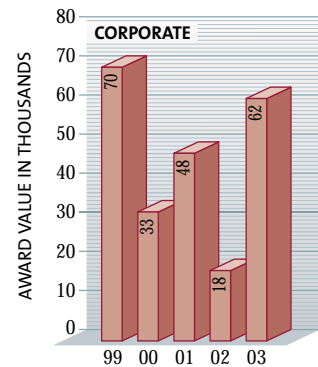
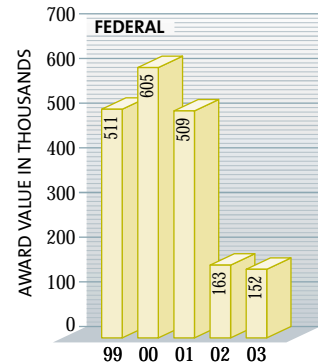
Diane Depanfilis, PhD, received a \$189,831 service contract from the Maryland Department of Human Resources (MDHR). These funds will support Family Connections, a community-based service to 80 vulnerable families (240 children) in Baltimore's west side.

Edward Pecukonis, MSW, received a five-year continuation grant of \$730,672 from the Health Resources and Services Administration to provide training for master-level social workers in maternal and child health.

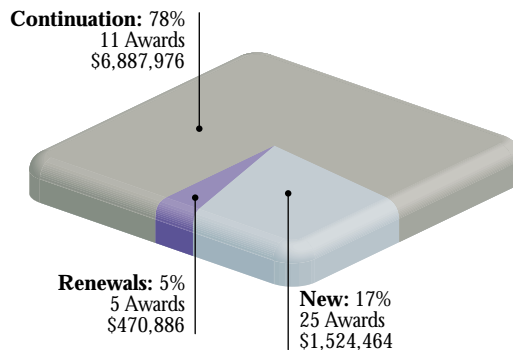
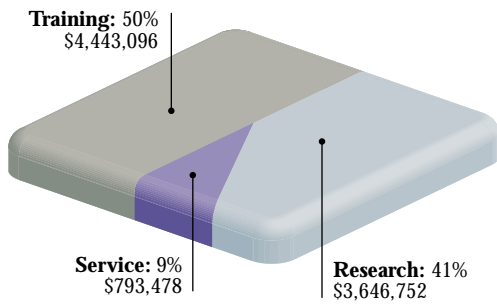
Cynthia Wingate, MSW, will conduct pre-service training for resource parents of foster children with a \$304,391 award from MDHR.

Donna Harrington, PhD, continues to be funded by the MDHR for a grant titled *Child Welfare Managed Care Evaluation* through a 12-month, \$414,430 award.

Five-Year Trend in Award Value



FY03 AWARDS BY TYPE



FACTS

Percent increase in dollar value over FY02 total

2%

Number of Awards

41

Increase in dollar amount of awards over FY99

8%

AREAS OF STRENGTH

Fifty-one faculty among five of the professional schools have been awarded grants and contracts that exceed \$1 million, accounting for more than \$111 million in FY03 awards or 42% of the year-end total. These faculty, whose pursuits in the areas of AIDS, cancer, vaccine development, diabetes, schizophrenia, and transplant surgery continue to elevate the University as a premier institution for research, health services, and training. Their success is detailed as follows:

\$8,706,851

Myron M. Levine, MD, PhD, DTPH
Director,
Center for Vaccine Development
Professor, Department of Medicine
School of Medicine
Vaccine development

\$7,304,114

Donald E. Wilson, MD, MACP
Vice President for Medical Affairs
Dean, School of Medicine
Clinical Research Center

\$5,882,455

Alan R. Shuldiner, MD
Professor, Department of Medicine
School of Medicine
Genetics, diabetes, obesity

\$5,187,311

William T. Carpenter, MD
Director, Maryland Psychiatric
Research Center
Professor, Department of Psychiatry
School of Medicine
Schizophrenia

\$4,717,843

William A. Blattner, MD
Professor, Department of Medicine
School of Medicine
AIDS

\$3,442,326

Andrew P. Goldberg, MD
Professor, Department of Medicine
School of Medicine
Gerontology

\$3,116,602

J. Glenn Morris Jr, MD, MPH & TM
Professor and Chair, Department of
Epidemiology and Preventive Medicine
School of Medicine
Infectious diseases

\$3,072,856

Howard H. Goldman, MD, PhD
Professor, Department of Psychiatry
School of Medicine
Mental health policy

\$3,052,755

Marc C. Hochberg, MD, MPH
Professor, Department of Medicine
School of Medicine
Osteoarthritis

\$3,034,750

Catherine Born, PhD
Research Associate Professor
Director, Born Research Group
School of Social Work
Welfare reform

\$2,732,341

Robert R. Redfield Jr, MD
Professor, Department of Medicine
School of Medicine
AIDS

\$2,646,025

Jay S. Magaziner, PhD
Professor, Department of Epidemiology
and Preventive Medicine
School of Medicine
Gerontology

\$2,609,364

Jennie D. Bloom, MSW
Assistant Dean of Graduate Field Instruction
School of Social Work
Social work training

\$2,508,424

Christopher J. Plowe, MD, MPH
Associate Professor, Department of Medicine
School of Medicine
Malaria

\$2,263,956

Frieda O. Weise, MLS, AHIP
Executive Director, Health Sciences
and Human Services Library
Regional Medical Library

\$2,251,744

Ronald Dubner, DDS, PhD
Professor and Chair, Department
of Biomedical Sciences
Dental School
Persistent pain

\$2,219,440

Joseph Lakowicz, PhD
Professor, Department of
Biochemistry and Molecular Biology
School of Medicine
Spectrofluorometry

\$2,218,153

Brian Berman, MD
Professor, Department of Family Medicine
Director, Program in
Complementary Medicine
School of Medicine
Acupuncture

\$2,175,721

Eric Weintraub, MD
Associate Professor, Department
of Psychiatry
School of Medicine
Substance abuse

\$1,991,632

Michael T. Shipley, PhD
Professor and Chair, Department
of Anatomy and Neurobiology
School of Medicine
Neurobiology

\$1,846,560

Patricia C. Dischinger, PhD
Associate Professor, Department of
Epidemiology and Preventive Medicine
School of Medicine
Vehicular trauma

\$1,716,898

Anthony F. Lehman, MD, MSPH
Professor and Chair, Department
of Psychiatry
School of Medicine
Schizophrenia

\$1,712,241

Thomas MacVittie, PhD
Professor, Pathology and Greenebaum
Cancer Center
School of Medicine
Cancer

\$1,710,445

Claudia R. Baquet, MD, MPH
Associate Dean for Policy and Planning
Office of the Dean
School of Medicine
Health policy and rural outreach

\$1,674,741

Terry B. Rogers, PhD
Professor, Department of Biochemistry
and Molecular Biology
School of Medicine
Heart disease

\$1,590,919

Barbara C. Hansen, PhD
Professor, Department of Physiology
School of Medicine
Obesity

\$1,584,314

Ligia Peralta, MD
Associate Professor, Department of Pediatrics
School of Medicine
Adolescent pediatrics

\$1,521,753

Mona Baumgarten, PhD
Associate Professor, Division of
Gerontology
Epidemiology and Preventive Medicine
School of Medicine
Gerontology

\$1,488,674

Stephen Meltzer, MD
Professor of Medicine, Gastroenterology
School of Medicine
Cancer

\$1,463,255

G. Thomas Strickland, MD, PhD
Professor, Department of Epidemiology
and Preventive Medicine
School of Medicine
International health

\$1,449,139

Mark D. Weist, PhD
Associate Professor, Psychiatry
School of Medicine
Mental health

\$1,408,834

Pinaki Panigrahi, MD, PhD
Associate Professor, Pediatrics
School of Medicine
Pediatric infections

\$1,396,820

Martin Schneider, PhD
Professor, Biochemistry, Molecular Biology
School of Medicine
Skeletal muscle

\$1,361,337

Ebenezer Israel, MD, MPH
Associate Professor, Epidemiology
and Preventive Medicine
School of Medicine
Cancer

\$1,356,468

Gary Fiskum, PhD
Professor and Research Director
Department of Anesthesiology
School of Medicine
Brain injury

\$1,334,847

Joel D. Greenspan, PhD
Associate Professor, Department of
Biomedical Sciences
Dental School
Craniofacial pain

\$1,112,157

James Nataro, MD, PhD
Professor, Department of Pediatrics
School of Medicine
Pediatric infectious diseases

\$1,096,125

William F. Morgan, PhD
Professor, Department of Radiation
Oncology
School of Medicine
Genomic X-ray

\$1,093,707

Edson Albuquerque, MD, PhD
Chair, Pharmacology & Experimental
Therapy
School of Medicine
Molecular targets

\$1,093,567

Alan S. Bellack, PhD, Director
Department of Psychology - MIRECC
Baltimore VA Medical Center
Substance abuse

\$1,080,138

Raymond Jones, PhD
Professor, Department of Pathology
School of Medicine
Cancer

\$1,076,031

Stephanie Vogel, PhD
Professor, Microbiology & Immunology
School of Medicine
Sepsis, Immunology

\$1,065,535

Bradley E. Alger, PhD
Professor, Department of Physiology
School of Medicine
Neuroscience

\$1,064,732

James Kaper, PhD
Professor, Microbiology & Immunology
School of Medicine
Vaccine development

\$1,063,684

Jay A. Perman, MD
Professor and Chair, Department of
Pediatrics
School of Medicine
HIV-service to women and children

\$1,034,853

Beth Barnett, MD
Associate Professor, Family Medicine
School of Medicine
Family health care

\$1,033,918

Ilene H. Zuckerman, PharmD
Associate Professor, Pharmacy
School of Pharmacy
Drug utilization

\$1,031,336

**Barbara Resnick,
PhD, CRNP, FAAN**
Assistant Professor, Nursing
School of Nursing
Gerontology, Hip fracture

\$1,015,548

Linda Kaljee, PhD
Assistant Professor, Pediatric Medicine
School of Medicine
HIV, Substance abuse

\$1,007,420

Margaret Rennels, MD
Clinical Head and Director of
Infectious Diseases
School of Medicine
Pediatrics

\$1,003,267

Ronald Zuskin, MSW
Director of Training
School of Social Work
Family and child welfare

List does not include:

Tobacco Restitution Funds
The fund to administer the Psychiatric Research Center
The Mercy Hospital Agreement
Funds received through UMMS
Funds for Service Agreements

First-time Funded Faculty

Whether a large research grant, a service agreement, or a fellowship, ORD is always pleased to see the first award arrive for a principal investigator at UMB. For some, this is a “foot in the door” for future funding, and for others it is a validation of their move to UMB from another organization. During FY03, 35 PIs, with representation from every school, received a funding award or agreement for the first time through UMB.

APPENDIX A ALL GOVERNMENT SOURCES FY99-FY03

AGENCY	#	FY 99 AMOUNT	#	FY 00 AMOUNT	#	FY 01 AMOUNT	#	FY 02 AMOUNT	#	FY 03 AMOUNT
NAT INST OF HEALTH	317	\$72,999,581	304	\$70,925,797	358	\$86,271,002	340	\$101,475,472	382	\$106,792,745
ADAMHA	35	8,505,873	50	13,222,266	58	13,261,981	63	16,000,247	70	18,070,254
HEALTH RES. & SERV. ADM.	23	3,676,124	28	4,519,279	21	3,551,574	23	5,205,948	22	4,811,756
HUMAN DEV SERVICES	4	847,742	2	592,000	3	609,276	6	1,123,442	6	1,480,536
HEALTH CARE FIN ADM	-	-	1	24,598	3	357,764	2	31,076	-	-
AGENCY HLTH CARE POL & RES	3	437,931	6	658,671	4	647,183	7	882,604	6	832,889
CENT FOR MENTAL HEALTH SERV.	1	48,999	2	557,117	1	64,800	7	151,835	-	-
CENT FOR DISEASE CONTROL	5	894,143	8	1,155,923	7	439,680	6	759,274	9	1,896,863
DHHS ADMIN/ CHILDREN & FAM	2	249,818	3	349,057	2	236,337	4	-	3	208,255
FOOD AND DRUG ADM.	2	268,778	2	347,799	3	560,544	4	435,064	3	208,255
NOSHHA	1	221,323	2	430,941	5	985,307	6	1,200,472	6	1,515,017
OCCUPATIONAL SAFETY/HEALTH	1	24,999	-	-	-	-	-	-	-	-
NATL MARINE FIS. SERV.	-	-	-	-	-	-	-	-	-	-
NATIONAL VACCINE PROGRAM	-	-	-	-	-	-	-	-	-	-
TOTAL DHHS	394	\$88,175,311	408	\$92,783,448	465	\$106,985,458	464	\$127,265,434	474	\$135,608,315
AGENCY FOR INTERN DEV.	1	999,998	1	247,256	2	1,155,480	-	-	-	-
BUREAU OF CENSUS	-	-	-	-	1	16,813	-	-	0	0
DEPARTMENT OF THE TREASURY	-	-	-	-	-	-	-	-	0	0
DEPT. OF DEFENSE	24	2,387,867	33	3,527,417	29	2,993,043	40	5,825,276	25	5,426,818
DEPT OF LABOR	-	-	-	-	1	24,995	-	-	0	-
DEPARTMENT OF THE TREASURY	0	0	0	0	0	0	-	-	0	-
EMBASSY OF THE ARAB REPUBLIC	1	3,910	-	0	0	44,332	1	52,941	1	50,748
FEDERAL AVIATION ADMIN.	0	0	0	0	0	0	-	-	1	57,069
FEDERAL TRADE COMMISSION	3	545,867	2	261,111	1	5,000	-	-	0	-
ENVIRON PROTECT. AGENCY	3	545,867	4	533,703	2	520,541	2	173,699	-	-
NAT INST OF TECHNOLOGY	1	23,000	1	55,300	-	-	1	50,000	-	-
NAT SCIENCE FOUNDATION	10	890,199	8	617,497	8	1,225,156	5	538,436	7	629,620
NATIONAL RESEARCH COUNCIL	0	0	0	0	-	-	-	-	-	-
U. S. DEPT. OF EDUCATION	0	-	-	-	-	-	-	-	1	148,742
U. S. DEPT. OF ENERGY	0	0	1	434,874	1	337,000	2	148,579	4	1,018,776
U. S. DEPT. OF JUSTICE	1	50,000	-	-	1	-	1	546,659	1	1,018,776
NASA	1	119,000	2	125,000	3	328,750	2	354,608	1	35,000
NATL HIGHWAY TRAFIC SAFETY	2	490,149	2	546,229	3	612,511	3	578,921	2	491,000
U. S. AIR FORCE ARMSTRONG LABS.	-	-	-	-	1	9,706	1	7,428	-	-
U. S. EGYPT ST. JOINT BOARD PROG.	2	22,486	3	33,610	1	14,820	1	4,922	-	-
U. S. DEPT. OF STATE OFFICE MED SE	2	-	-	-	-	-	-	276,615	4	566,164
U. S. DISTRICT COURT	2	329,256	1	332,581	1	225,336	-	-	2	493,672
U. S. DEPT. OF AGRICULTURE	5	457,852	4	887,627	3	662,377	5	349,794	9	1,266,256
U. S. DEPT. OF TRANS.	0	0	0	-	-	-	-	-	-	-
U. S. DEPT OF HOUSING/UR DEV	1	133,300	1	133,300	1	133,300	1	435,510	-	-
VETERANS ADM.	1	4,264,880	161	7,158,080	171	7,293,458	154	5,990,358	165	8,988,385
TOTAL FEDERAL AGENCIES	568	\$96,883,075	632	\$107,442,033	695	\$122,586,076	687	\$142,794,337	697	\$154,846,820
LOCAL GOVERNMENT	73	5,677,406	69	5,387,906	98	8,281,862	64	4,396,728	56	3,787,947
STATE OF MARYLAND	95	23,301,592	111	24,707,103	96	21,280,539	127	30,191,427	118	30,938,832
PRIVATE	589	37,435,655	639	44,501,164	708	60,820,712	795	72,674,090	798	76,126,910
TOTAL NON FEDERAL AGENCIES	757	\$66,414,653	819	\$74,596,173	902	\$90,343,113	986	\$107,262,245	972	\$110,853,689
TOTAL	1,325	\$165,297,728	1,451	\$182,038,206	1,597	\$212,931,189	1,673	\$250,056,582	1,669	\$265,700,509

APPENDIX B AWARDS BY NIH AND OTHER FEDERAL SOURCES BY SCHOOL

	#	FY 99 AMOUNT	#	FY 00 AMOUNT	#	FY 01 AMOUNT	#	FY 02 AMOUNT	#	FY 03 AMOUNT
DENTAL SCHOOL										
NIH	20	\$3,032,996	11	\$1,846,326	29	\$4,544,635	34	\$6,818,797	21	\$7,154,646
ADAMHA	2	409,452	15	2,686,791	2	379,655	3	730,270	16	3,270,381
OTHER DHHS	3	81,334	8	355,214	5	258,131	3	149,989	2	140,988
TOTAL DHHS	25	\$3,523,782	34	\$4,888,331	36	\$5,182,421	40	\$7,699,056	39	\$10,566,015
SCHOOL OF LAW										
NIH	0	0	0	0	0	0	0	0	0	0
ADAMHA	0	0	0	0	0	0	0	0	0	0
OTHER DHHS	0	0	0	0	0	0	0	0	0	0
TOTAL DHHS	0	0	0	0	0	0	0	0	0	0
SCHOOL OF MEDICINE										
NIH	284	\$66,811,549	283	\$67,124,344	318	\$78,683,941	310	\$95,759,733	307	\$93,749,419
ADAMHA	27	7,439,795	27	10,154,989	35	10,131,081	34	8,872,857	48	14,166,146
OTHER DHHS	25	4,311,003	28	5,042,507	28	4,788,822	36	6,629,994	33	7,088,962
TOTAL DHHS	336	\$78,562,347	338	\$82,321,840	381	\$93,603,844	380	\$111,262,584	388	\$115,004,527
SCHOOL OF NURSING										
NIH	1	\$15,748	5	662,612	14	\$2,124,492	6	\$1,306,586	9	\$1,687,990
ADAMHA	0	0	0	0	0	0	1	74,250	1	74,250
OTHER DHHS	11	1,828,915	12	2,276,104	6	921,467	15	2,601,155	12	3,128,753
TOTAL DHHS	12	\$1,844,663	17	\$2,938,716	20	\$3,045,959	22	\$3,981,991	22	\$4,890,993
SCHOOL OF PHARMACY										
NIH	7	\$1,028,373	7	\$604,840	12	\$1,779,533	8	\$1,505,643	11	\$1,936,734
ADAMHA	6	656,626	4	380,486	6	699,833	3	346,734	5	539,477
OTHER DHHS	1	393,559	3	489,503	4	446,135	5	442,886	3	234,207
TOTAL DHHS	14	\$2,078,558	14	\$1,474,829	22	\$2,925,501	16	\$2,295,263	19	\$2,730,418
SCHOOL OF SOCIAL WORK										
NIH	0	0	0	0	0	0	0	0	0	0
ADAMHA	0	0	0	0	0	0	0	0	0	0
OTHER DHHS	4	377,823	4	472,057	3	359,337	3	163,633	2	152,405
TOTAL DHHS	4	\$377,823	4	\$472,057	3	\$359,337	3	\$163,633	2	\$152,405
CAMPUS ADMINISTRATION										
NIH	3	\$1,788,138	2	\$687,675	3	\$1,868,396	3	\$1,862,907	4	\$2,263,956
ADAMHA	0	0	0	0	0	0	0	0	0	0
OTHER DHHS	0	0	0	0	0	0	0	0	0	0
TOTAL DHHS	3	\$1,788,138	2	\$687,675	3	\$1,868,396	3	\$1,862,907	4	\$2,263,956
TOTAL ALL SCHOOLS	394	\$88,175,311	409	\$92,783,448	465	\$106,985,458	464	\$127,265,434	464	\$135,608,314

APPENDIX C AWARDS BY TYPE FY99-FY03

	#	FY 99 AMOUNT	#	FY 00 AMOUNT	#	FY 01 AMOUNT	#	FY 02 AMOUNT	#	FY 03 AMOUNT
DENTAL SCHOOL										
NEW	25	\$1,774,925	25	\$1,654,165	45	\$2,407,159	39	\$3,502,117	40	\$5,582,666
RENEWAL	7	613,903	12	1,465,417	13	746,264	6	1,115,250	11	1,022,976
CONTINUATION	40	3,267,688	40	3,700,782	31	4,382,875	41	5,419,434	35	7,157,687
TOTAL	72	5,656,516	77	6,820,364	89	7,536,298	86	10,036,801	86	13,763,329
SCHOOL OF LAW										
NEW	1	58,350	3	166,087	12	610,903	19	844,694	17	459,835
RENEWAL	1	77,530	1	83,250	1	40,000	2	124,684	5	189,600
CONTINUATION	0	0	1	19,425	-	0	1	50000	3	452,518
TOTAL	2	135,880	5	268,762	13	650,903	22	1,019,378	25	1,137,953
SCHOOL OF MEDICINE										
NEW	427	45,592,138	499	47,885,447	686	87,194,935	654	90,416,087	676	92,432,536
RENEWAL	81	9,238,375	72	12,725,729	106	16,561,320	74	14,984,351	96	18,488,566
CONTINUATION	593	83,242,971	633	95,787,803	522	80,803,228	617	106,140,611	569	112,102,499
TOTAL	1,101	138,073,484	1,204	156,398,979	1,314	184,559,483	1,345	211,541,049	1,314	223,023,601
SCHOOL OF NURSING										
NEW	27	1,799,143	29	2,059,439	28	2,001,010	50	4,157,109	43	3,335,678
RENEWAL	5	287,212	6	313,112	4	123,487	3	420,703	7	724,197
CONTINUATION	15	972,556	26	1,959,104	24	2,368,910	13	2,305,496	28	3,533,467
TOTAL	47	3,058,911	61	4,331,655	56	4,493,407	66	6,883,308	78	7,593,342
SCHOOL OF PHARMACY										
NEW	27	2,449,774	28	1,505,243	54	2,891,894	65	3,436,865	46	2,664,602
RENEWAL	9	2,252,672	6	1,137,366	6	904,986	11	1,276,444	5	204,213
CONTINUATION	34	3,564,870	33	4,206,125	33	4,890,730	36	5,045,878	40	6,067,171
TOTAL	70	8,267,316	67	6,848,734	93	8,677,610	112	9,759,187	91	8,935,986
SCHOOL OF SOCIAL WORK										
NEW	6	227,626	12	2,390,847	14	447,049	17	3,352,216	25	1,524,464
RENEWAL	4	1,484,184	6	1,745,863	5	3,447,259	5	3,035,432	5	470,886
CONTINUATION	17	6,518,323	14	2,426,345	9	1,094,626	12	2,363,164	11	6,887,976
TOTAL	27	8,230,133	32	6,563,055	28	4,988,934	34	8,750,812	41	8,883,326
CAMPUS ADMINISTRATION										
NEW	1	27,350	1	28,500	-	-	7	1,922,684	6	835,396
RENEWAL	0	0	1	12,000	4	2,024,554	-	-	-	-
CONTINUATION	5	1,848,138	3	766,157	-	-	1	143,363	1	1,527,576
TOTAL	6	1,875,488	5	806,657	4	2,024,554	8	2,066,047	7	2,362,972
TOTAL ALL SCHOOLS										
NEW	514	51,929,306	597	55,689,728	838	95,552,950	851	107,631,772	853	106,871,177
RENEWAL	107	13,953,876	104	17,482,737	139	23,847,870	101	20,956,864	129	21,100,438
CONTINUATION	704	99,414,546	750	108,865,741	620	93,530,369	721	121,467,946	687	137,728,894
TOTAL	1,325	\$165,297,728	1,451	\$182,038,206	1,597	\$212,931,189	1,673	\$250,056,582	1,669	\$265,700,509

APPENDIX D AWARDS BY TYPE FY99-FY03

APPENDIX D AWARDS BY TYPE FY99-FY03

SCHOOLS:	FY 99	FY 00	FY 01	FY 02	FY 03	% CHANGE OVER FY02
DENTAL						
RESEARCH	\$4,246,664	\$5,430,715	\$5,995,212	\$8,356,424	\$12,057,456	
SERVICE	1,006,447	884,721	1,067,822	930,265	993,886	
TRAINING	404,405	504,928	473,264	750,112	711,987	
TOTAL	5,655,516	6,820,364	7,536,298	10,036,801	13,763,329	27%
LAW						
RESEARCH	\$58,350	\$28,240	\$74,450	\$455,669	\$544,587	
SERVICE	77,530	240,522	534,403	455,009	314,950	
TRAINING	-	-	42,050	108,700	278,416	
TOTAL	135,880	268,762	650,903	1,019,378	1,137,953	12%
MEDICINE						
RESEARCH	\$117,251,889	\$126,869,018	\$149,817,036	\$177,835,563	\$179,924,451	
SERVICE	15,061,017	21,281,109	25,168,626	23,581,484	30,926,352	
TRAINING	5,760,578	8,248,852	9,573,821	10,124,002	12,172,798	
TOTAL	138,073,484	156,398,979	184,559,483	211,541,049	223,023,601	5%
NURSING						
RESEARCH	\$1,094,604	\$1,794,542	\$2,477,298	\$3,379,370	\$4,277,746	
SERVICE	971,531	1,033,558	1,104,533	1,746,806	1,861,422	
TRAINING	992,776	1,503,555	911,576	1,757,132	1,464,174	
TOTAL	3,058,911	4,331,655	4,493,407	6,883,308	7,593,342	10%
PHARMACY						
RESEARCH	\$4,646,168	\$3,687,288	\$6,065,655	\$6,495,328	\$5,991,615	
SERVICE	3,386,071	2,860,391	2,296,401	2,890,897	2,594,234	
TRAINING	236,077	301,055	355,354	372,962	350,137	
TOTAL	8,267,316	6,848,734	8,677,610	9,759,187	8,935,986	-8%
SOCIAL WORK						
RESEARCH	\$5,025,576	\$2,993,951	\$1,087,357	\$4,199,523	\$3,646,752	
SERVICE	723,795	684,423	428,226	629,155	793,478	
TRAINING	2,480,762	2,894,681	3,473,351	3,922,134	4,443,096	
TOTAL	8,230,133	6,563,055	4,988,934	8,750,812	8,883,326	2%
CAMPUS ADMINISTRATION						
RESEARCH	-	-	-	\$25,000	\$70,000	
SERVICE	1,865,488	794,657	2,024,554	2,038,047	2,292,972	
TRAINING	10,000	12,000	-	3,000	-	
TOTAL	1,875,488	806,657	2,024,554	2,066,047	2,362,972	14%
TOTAL ALL SCHOOLS						
RESEARCH	\$132,322,251	\$140,803,754	\$165,517,208	\$200,746,877	\$206,512,807	
SERVICE	23,090,879	27,779,381	32,584,565	32,271,663	39,777,294	
TRAINING	9,884,598	13,455,071	14,829,416	17,038,042	19,410,608	
TOTAL	\$165,297,728	\$182,038,206	\$212,931,189	\$250,056,582	\$265,700,509	6%

APPENDIX E AWARDS BY DEPARTMENT FY02-FY03

SCHOOL/DEPT/DIVISION	#	FY 02 AMOUNT	#	FY 03 AMOUNT	FY 03 DIRECT	FY 03 INDIRECT
DENTAL SCHOOL						
ENDODONTICS	0	0	0	0	0	0
DENTAL HYGIENE	2	39,342	3	50,390	46,725	3,665
RESTORATIVE DENTISTRY	9	217,217	7	410,271	340,805	69,466
BIOMEDICAL SCIENCES	37	7,364,489	35	10,331,050	7,485,072	2,845,978
DIAGNOSTIC SCIENCES & PATH.	15	1,389,253	11	1,227,324	1,061,119	166,205
ORAL HEALTH CARE DELIVERY	16	683,697	13	734,484	655,954	78,430
ORAL PATHOLOGY	-	-	-	-	-	-
ORTHODONTICS	-	-	-	-	-	-
ORAL-MAXILLOFACIAL SURGERY	-	-	2	29,013	29,013	-
PEDIATRIC DENTISTRY	4	99,371	8	112,007	106,103	5,904
PERIODONTICS	3	243,432	7	868,890	651,807	217,083
TOTAL	86	10,036,801	86	13,763,329	10,376,598	3,386,731
SCHOOL OF LAW						
CLINICAL LAW	14	561,542	18	474,028	464,766	9,262
COASTAL AND ENVIRONMENTAL POL.	0	0	0	0	0	0
DEAN'S OFFICE	5	338,269	3	551,856	503,905	47,951
LAW LIBRARY	0	0	0	0	0	-
NO DEPARTMENT LEVEL	3	119,567	4	112,069	112,069	-
TOTAL	22	1,019,378	25	1,137,953	1,080,740	57,213
SCHOOL OF MEDICINE						
ANATOMY	29	6,932,704	32	7,821,211	5,471,330	2,349,881
ANESTHESIOLOGY	12	1,531,212	13	1,759,059	1,246,926	512,133
BIOCHEMISTRY	30	7,240,935	32	8,278,464	6,154,455	2,124,009
COMPARATIVE MEDICINE	4	1,220,322	3	1,755,167	1,433,964	341,203
COMPLEMENTARY MEDICINE	7	3,114,764	4	2,390,787	1,956,946	433,841
DEAN'S OFFICE	14	10,992,304	18	16,414,581	15,570,752	843,829
DERMATOLOGY	3	322,356	4	627,523	516,096	111,427
EPIDEMIOLOGY & PREV MED	94	15,673,032	89	15,385,058	12,624,368	2,760,690
FAMILY MEDICINE	12	1,665,566	9	2,071,754	1,799,021	272,733
PROGHUMAN HEALTH & ENVIRONMENT	1	245,463	1	232,550	167,075	65,475
MEDICINE	330	52,789,847	385	57,527,062	47,115,741	10,411,321
MEDICAL TECHNOLOGY	3	347,352	4	386,369	280,952	105,417
MICROBIOLOGY	43	7,402,009	34	5,655,910	3,998,225	1,657,685
NATIONAL STUDY CENTER	23	2,539,902	26	3,420,693	2,970,412	450,281
NEUROLOGY	65	6,523,421	74	6,968,308	5,713,302	1,255,006
OBSTETRICS & GYNECOLOGY	11	2,666,953	5	1,450,503	1,104,777	345,726
OPHTHALMOLOGY	13	1,250,598	8	856,519	657,662	198,857
PATHOLOGY	31	3,031,355	38	3,400,755	2,677,426	723,329
PEDIATRICS	141	18,776,953	137	17,622,507	14,737,433	2,885,074
PHARMACOLOGY	27	3,438,951	29	4,212,474	2,995,033	1,217,441
PHYSICAL THERAPY	7	354,159	11	469,816	360,516	109,300
PHYSIOLOGY	49	9,619,182	42	7,719,961	5,544,459	2,175,502
PROGRAM OF ONCOLOGY	118	15,065,662	86	13,970,993	12,446,202	1,524,791
PROGRAM OF TRAUMA	8	288,985	7	909,375	702,403	206,972
PSYCHIATRY	164	25,923,535	162	28,936,273	25,386,884	3,549,389
DIAGNOSTIC RADIOLOGY	11	1,031,371	11	860,681	636,615	224,066
RADIATION ONCOLOGY	25	2,711,857	19	2,104,974	1,535,196	569,778
STUDENT AFFAIRS					-	-
NEUROLOGICAL SURGERY	4	408,815	1	259,875	175,000	84,875
ORTHOPEDIC SURGERY		408,815	5	634,231	460,323	173,908
SURGERY	66	8,431,484	51	8,859,835	7,463,211	1,396,624
VIDEO PRESS		8,431,484	1	40,333	40,333	-
TOTAL	1,345	211,541,049	1,341	223,023,601	183,943,038	39,080,563
SCHOOL OF NURSING	66	6,883,308	78	7,593,342	6,200,070	1,393,272
SCHOOL OF PHARMACY						
CTR ON DRUGS & PUBLIC POLICY	-	-	1	45,521	30,654	14,867
DEAN'S OFFICE	1	81,010	1	5,699	5,376	323
PHARMACEUTICAL SCIENCES	49	4,093,616	36	3,885,138	2,797,617	1,087,521
PHARMACY PRACTICE & SCIENCE	61	5,584,561	52	4,963,278	4,231,582	731,696
PHARM. HLTH. SERV. & RES.		5,584,561	1	36,350	36,350	-
TOTAL	112	9,759,187	91	8,935,986	7,101,579	1,834,407
SCHOOL OF SOCIAL WORK & COMMUNITY PLANNING	34	8,750,812	41	8,883,326	8,196,156	687,170
CAMPUS ADMINISTRATION	8	2,066,047	7	2,362,972	2,039,297	323,675
TOTAL ALL SCHOOLS	1,673	250,056,582	1,669	265,700,509	218,937,478	46,763,031

APPENDIX F SUCCESS RATES (PAGE 1 OF 3)

Department	Competing Proposals	Projects Awarded	Success Rate	For Projects Awarded			For Projects Not Awarded				
				Requested	Awarded	Percent	Still Pending	Not Funded	Disapp. *	Withdrawn	
SCHOOL OF MEDICINE											
Anatomy & Neurobiology	21	9	42.8%	4,319,050	2,065,308	47.8%	11	0	2	0	
Anesthesiology	11	5	45.4%	2,739,426	481,219	17.5%	5	0	1	0	
Biochemistry/Molecular Biology	56	18	32.1%	13,086,164	4,885,521	37.3%	36	0	3	0	
Complementary Medicine	6	1	16.6%	2,296,041	320,182	13.9%	5	0	0	0	
Dean's Office	20	6	30.0%	112,124,983	5,793,274	5.1%	12	0	2	0	
Dermatology	4	3	75.0%	650,459	281,808	43.3%	1	0	0	0	
Diagnostic Radiology	14	6	42.8%	2,386,656	729,849	30.5%	8	0	0	0	
Epidemiology & Preventive Medicine	89	34	38.2%	24,111,436	3,457,506	14.3%	51	0	4	1	
Family Medicine	10	4	40.0%	1,359,394	495,800	36.4%	5	0	1	0	
Medical & Research Technology	3	2	66.6%	155,466	83,146	53.4%	1	0	1	0	
Microbiology and Immunology	340	178	52.3%	66,888,998	23,991,607	35.8%	164	0	5	0	
National Study Center	47	11	23.4%	7,674,004	1,231,619	16.0%	38	0	0	1	
Neurological Surgery	27	14	51.8%	3,088,992	1,601,138	51.8%	14	0	0	0	
Neurology	3	1	33.3%	311,468	222,750	71.5%	2	0	0	0	
Obstetrics/Gynecology	65	39	60.0%	8,356,477	3,346,192	40.0%	26	0	1	0	
Ophthalmology	4	1	25.0%	2,200,837	10,000	0.4%	2	0	1	0	
Orthopedic Surgery	9	1	11.1%	1,113,791	11,666	1.0%	6	0	2	0	
Pathology	7	3	42.8%	999,322	371,524	37.1%	4	0	0	0	
Pediatrics	45	24	53.3%	5,721,623	1,705,102	29.8%	18	0	3	0	
Pharmacology/Exp. Therapeutics	129	58	44.9%	22,146,780	9,461,229	42.7%	73	0	0	2	
Physical Therapy	34	14	41.1%	7,309,285	1,957,007	26.7%	19	0	1	0	
Physiology	14	7	50.0%	947,795	149,324	15.7%	8	0	0	0	
Prog/Human Health & Environment	33	14	42.4%	6,152,938	1,789,505	29.0%	20	0	0	0	
Program of Trauma	1	0	0.0%	55,791	0	0.0%	0	0	1	0	
Psychiatry	6	5	83.3%	907,136	600,254	66.1%	1	0	0	0	
Radiation Oncology	151	73	48.3%	21,586,022	5,946,783	27.5%	81	0	5	0	
Surgery	23	4	17.3%	2,998,507	537,251	17.9%	18	0	0	1	
Vet Resources/Comparative Medicine	73	27	36.9%	13,535,946	4,443,194	32.8%	43	0	3	0	
Video Press	2	1	50.0%	890,462	45,593	5.1%	1	0	0	0	
	1	1	100.0%	40,333	40,333	100.0%	0	0	0	0	
School Totals:	1,308	592	45.2%	346,992,308	79,075,657	22.7%	706	0	36	5	
GRADUATE SCHOOL											
No Department Level	1	1	100.0%	70,000	70,000	100.0%	0	0	0	0	
School Totals:	1	1	100.0%	70,000	70,000	100.0%	0	0	0	0	

*Disapproved

APPENDIX F SUCCESS RATES (PAGE 2 OF 3)

Department	Competing Proposals	Projects Awarded	Success Rate	For Projects Awarded			For Projects Not Awarded				
				Requested	Awarded	Percent	Still Pending	Not Funded	Disappr.*	Withdrawn	
SCHOOL OF LAW											
Clinical Law	19	17	89.4%	640,845	515,605	80.4%	2	0	0	0	0
Dean's Office	3	1	33.3%	319,711	121,211	37.9%	2	0	0	0	0
No Department Level	4	4	100.0%	145,794	112,069	76.8%	0	0	0	0	0
School Totals:	26	22	84.6%	1,106,350	748,885	67.6%	4	0	0	0	0
DENTAL SCHOOL											
Biomedical Sciences	32	13	40.6%	8,197,097	4,213,127	51.3%	22	0	0	0	0
Dental Hygiene	4	2	50.0%	85,344	32,054	37.5%	2	0	0	0	0
Diagnostic Sciences & Path.	9	6	66.6%	1,708,076	603,961	35.3%	6	0	0	0	0
Endodontics	2	1	50.0%	21,672	2,000	9.2%	1	0	0	0	0
Oral Health Care Delivery	11	9	81.8%	779,379	587,556	75.3%	3	0	0	0	0
Oral-Maxillofacial Surgery	2	1	50.0%	179,442	27,201	15.1%	1	0	0	0	0
Pediatric Dentistry	10	7	70.0%	129,843	89,007	68.5%	3	0	0	0	0
Periodontics	7	4	57.1%	987,766	504,953	51.1%	2	0	1	1	0
Restorative Dentistry	13	4	30.7%	270,876	227,588	84.0%	9	0	0	0	0
School Totals:	90	47	52.2%	12,359,495	6,287,447	50.8%	49	0	1	1	0
SCHOOL OF NURSING											
Academic Affairs	2	1	50.0%	80,105	30,105	37.5%	1	0	0	0	0
Acute and Long Term Care	1	0	0.0%	19,467	0	0.0%	0	0	1	1	0
Adult/Health Nursing	35	10	28.5%	5,120,583	866,955	16.9%	24	0	0	0	1
Behavioral & Community Health	16	7	43.7%	4,111,534	733,637	17.8%	8	0	0	1	0
Center for Research	3	3	100.0%	156,416	156,458	100.0%	0	0	0	0	0
Child, Women & Family Health	19	10	52.6%	1,808,876	337,294	18.6%	8	1	0	0	0
Clinical Practice and Services	10	4	40.0%	938,886	376,727	40.1%	6	0	0	0	0
Community Health/Primary Care	1	1	100.0%	44,305	44,305	100.0%	0	0	0	0	0
Dean's Office	2	1	50.0%	4,879,469	42,853	0.8%	1	0	0	0	0
Educ. Admin. & Health Policy	11	3	27.2%	950,121	44,148	4.6%	8	0	0	0	0
Maternal and Child Health	3	3	100.0%	202,919	192,302	94.7%	0	0	0	0	0
No Department Level	0	1	0.0%	0	19,642	0.0%	0	0	0	0	0
Office of Research	2	2	100.0%	126,000	126,000	100.0%	0	0	0	0	0
School Totals:	105	46	43.8%	18,438,681	2,970,426	16.1%	56	1	2	1	1

*Disapproved

APPENDIX F SUCCESS RATES (PAGE 3 OF 3)

Department	Competing Proposals	Projects Awarded	Success Rate	For Projects Awarded			For Projects Not Awarded				
				Requested	Awarded	Percent	Skill Pending	Not Funded	Disapp.*	Withdrawn	
SCHOOL OF PHARMACY											
Ctr. on Drugs & Public Policy	1	1	100.0%	87,024	45,521	52.3%	0	0	0	0	0
Dean's Office	1	0	0.0%	344,247	0	0.0%	1	0	0	0	0
Pharmaceut. Hlth. Serv. & Res.	5	1	20.0%	437,600	36,350	8.3%	4	0	0	0	0
Pharmaceutical Sciences	89	15	16.8%	11,757,631	1,119,261	9.5%	71	0	3	1	1
Pharmacy Practice & Science	4	32	38.0%	4,972,963	1,497,444	30.1%	51	0	1	1	0
School Totals:	180	49	27.2%	17,599,465	2,698,576	15.3%	127	0	4	1	1
SCHOOL OF SOCIAL WORK											
Community Planning Program	4	2	50.0%	334,771	179,411	53.5%	2	0	0	0	0
Dean's Office	2	1	50.0%	76,703	26,704	34.8%	1	0	0	0	0
No Department Level Training	28	17	60.7%	3,416,064	1,430,817	41.8%	10	0	1	1	0
	4	4	100.0%	131,203	131,203	100.0%	0	0	0	0	0
School Totals:	38	24	63.1%	3,958,741	1,768,135	44.6%	13	0	1	1	0
UMB CAMPUS ADMINISTRATION											
Academic Affairs	2	0	0.0%	110,000	0	0.0%	2	0	0	0	0
Campus Police	1	0	0.0%	39,353	0	0.0%	1	0	0	0	0
Health Sciences Library	3	2	66.6%	788,107	689,502	87.4%	1	0	0	0	0
Human Resource Service	1	0	0.0%	15,000	0	0.0%	1	0	0	0	0
Information Services	1	0	0.0%	393,992	0	0.0%	1	0	0	0	0
Vice President, Academic Aff.	2	0	0.0%	106,674	0	0.0%	2	0	0	0	0
School Totals:	10	2	20.0%	1,453,126	689,502	47.4%	8	0	0	0	0
TOTAL, ALL SCHOOLS:	1,758	783	44.5%	401,978,166	94,308,628	23.4%	963	1	44	7	

*Disapproved