



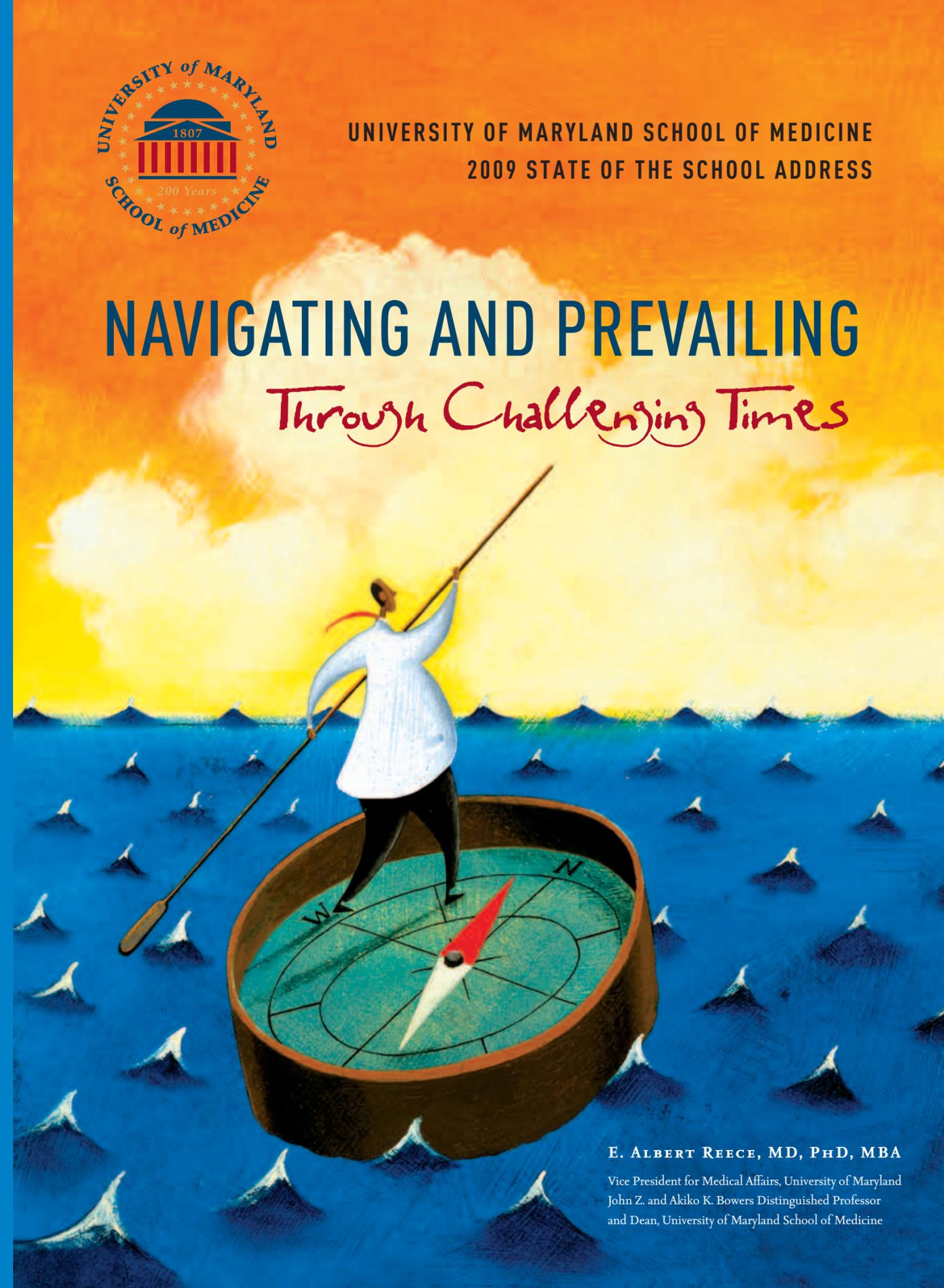
UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
2009 STATE OF THE SCHOOL ADDRESS

NAVIGATING AND PREVAILING

Through Challenging Times

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

655 West Baltimore Street · Baltimore, Maryland 21201 · <http://medschool.umaryland.edu>



E. ALBERT REECE, MD, PhD, MBA

Vice President for Medical Affairs, University of Maryland
John Z. and Akiko K. Bowers Distinguished Professor
and Dean, University of Maryland School of Medicine



UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

OUR MISSION

THE UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE IS DEDICATED TO PROVIDING EXCELLENCE IN BIOMEDICAL EDUCATION, BASIC AND CLINICAL RESEARCH, QUALITY PATIENT CARE AND SERVICE TO IMPROVE THE HEALTH OF THE CITIZENS OF MARYLAND AND BEYOND. THE SCHOOL IS COMMITTED TO THE EDUCATION AND TRAINING OF MD, MD/PHD, GRADUATE, PHYSICAL THERAPY AND REHABILITATION SCIENCE, AND MEDICAL AND RESEARCH TECHNOLOGY STUDENTS. WE WILL RECRUIT AND DEVELOP FACULTY TO SERVE AS EXEMPLARY ROLE MODELS FOR OUR STUDENTS.

Navigating and Prevailing Through Challenging Times

STATE OF THE SCHOOL ADDRESS 2009



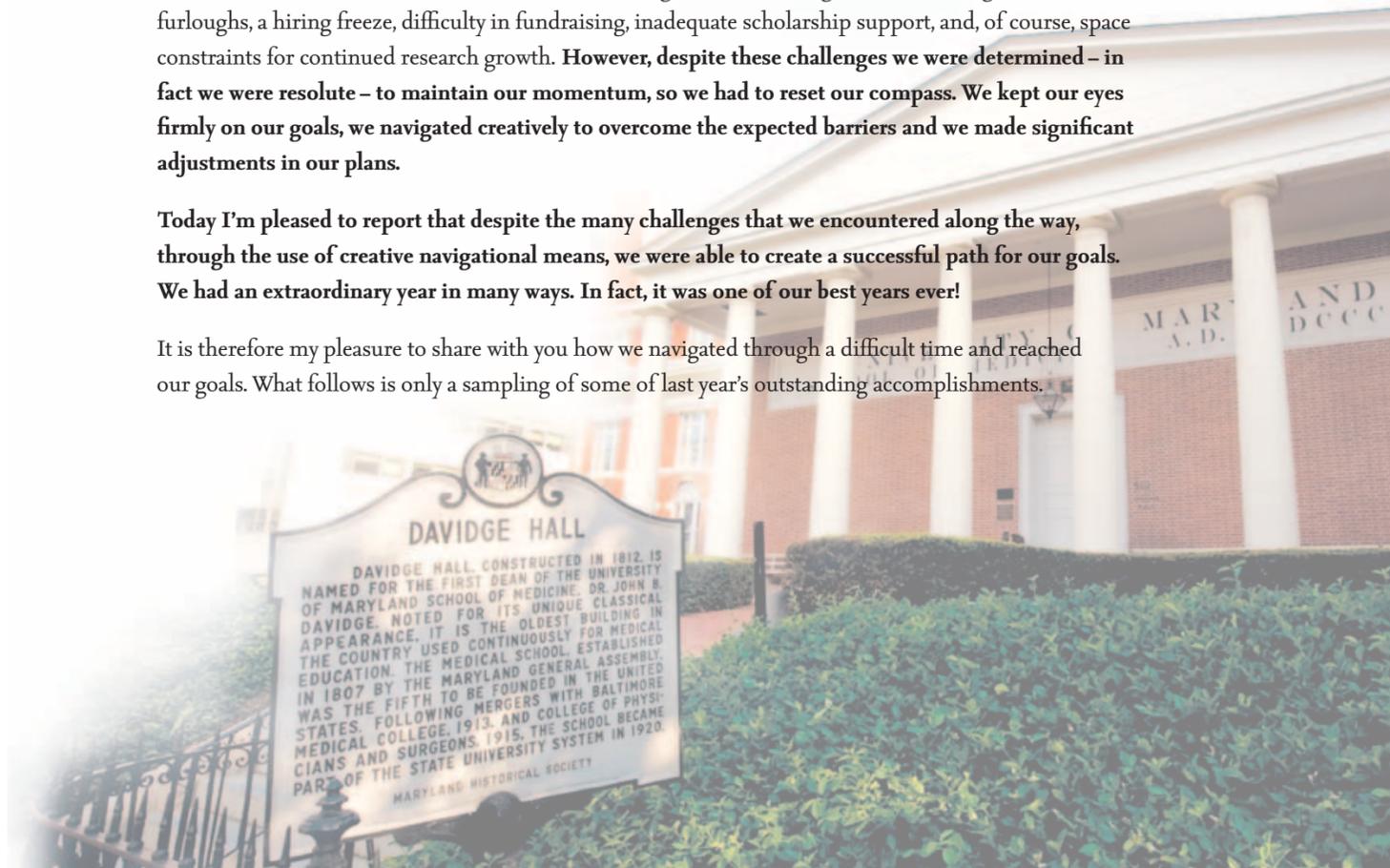
THE THEME OF THIS YEAR'S ADDRESS IS "NAVIGATING AND PREVAILING THROUGH CHALLENGING TIMES."

When we started this academic year we knew where we were and we knew where we wanted to go, but, like navigators, we carefully charted our course. As you know, navigational techniques typically involve locating the starting point, and plotting a course to a proposed end point. Using established information relevant to the proposed voyage, the navigator must then develop a plan. He or she must also be prepared for known risks and obstacles, such as changes in the weather, and take into account any special circumstances which may arise. The navigator's job then consists of monitoring progress and responding quickly and appropriately to unforeseen circumstances.

When the School of Medicine leadership charted our course this past year, we had no way of knowing what the future would bring. We mapped the path to achieve our ambitious goals, realizing that we may need to make modifications and adjustments along the way. We were confident that we were ready for the journey; in fact, we looked forward to the voyage ahead. However, like all medical institutions across the country we faced a storm of challenges. The national economic downturn that began a year ago had an immediate impact on our financial well-being. Some of the challenges that we faced included financial constraints for continued growth, state budget cuts, shrinking endowments, furloughs, a hiring freeze, difficulty in fundraising, inadequate scholarship support, and, of course, space constraints for continued research growth. **However, despite these challenges we were determined – in fact we were resolute – to maintain our momentum, so we had to reset our compass. We kept our eyes firmly on our goals, we navigated creatively to overcome the expected barriers and we made significant adjustments in our plans.**

Today I'm pleased to report that despite the many challenges that we encountered along the way, through the use of creative navigational means, we were able to create a successful path for our goals. We had an extraordinary year in many ways. In fact, it was one of our best years ever!

It is therefore my pleasure to share with you how we navigated through a difficult time and reached our goals. What follows is only a sampling of some of last year's outstanding accomplishments.



WORKFORCE »

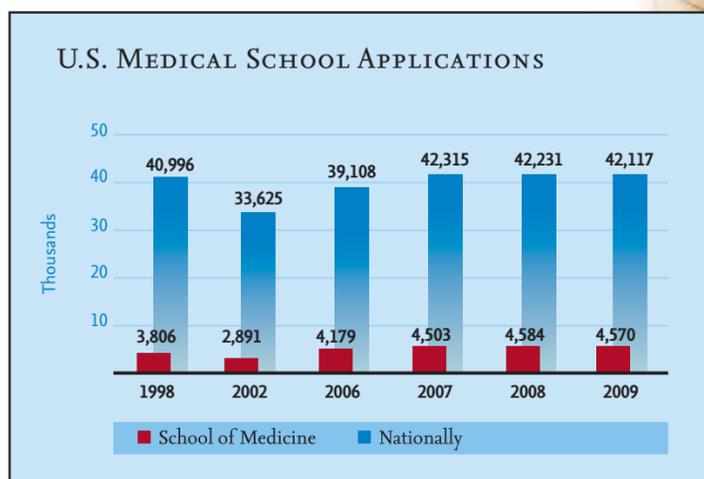
TOTAL WORKFORCE		
	2008	2009
Full-Time Faculty	1,209	1,229
Part-Time Faculty	249	253
Adjunct Faculty	1,227	1,196
Clinical Fellows*	210	213
Research Fellows	269	288
Residents*	560	569
Staff	2,494	2,576
University Physicians, Inc. Staff	984	917
Total	7,202	7,241

* UMMC pays salaries of most

[Figure 1: Workforce statistics]

BREAKDOWN OF FULL-TIME FACULTY		
	FY08	FY09
Total Full-Time Faculty	1,209	1,229
Women	420	434
Underrepresented Minorities	96	100
>90% retention rate of full-time faculty		

[Figure 2: Full-time faculty statistics]



[Figure 3: U.S. medical school applications]

Our total workforce of over 7,200 individuals is comprised of 500 clinical and research fellows, 570 residents and nearly 3,500 staff members (figure 1). Thirty five percent of our faculty are women and eight percent are underrepresented minorities (figure 2). Our faculty retention rate remains over 90 percent, which clearly reflects an atmosphere of collegiality and an embracing and enriching work environment.

“...an atmosphere of collegiality and an embracing and enriching work environment.”

EDUCATION »

Over 42,000 students applied for approximately 16,000 positions at medical schools across the United States (figure 3). At the University of Maryland, we received more than 4,500 applications and accepted 160 students. Last year's entering class, ranging in age from 20 to 32, came from 79 colleges and universities from across the nation (figure 4). Fourteen percent were underrepresented minorities and 56 percent were women. Our first year medical students' overall grade point average and MCAT scores continue to be well above the national average.

Our total student enrollment is nearly 1,300, just under half of whom are medical students (figure 5). The others are MD/PhD, graduate (MS/PhD), allied health, genetics counseling and public health students. We continue to make significant strides in increasing the diversity of our faculty, staff and students. About 15 percent of medical and graduate students are underrepresented minorities, with underrepresented physical therapy students at seven percent, and an impressive 40 percent in our medical and research technology program (figure 6).

MEDICAL SCHOOL APPLICATIONS*	
■ 4,570 total applications for class of 160 students	
■ 79 colleges and universities are represented	
■ Ages range from 20 to 32 years	
■ 14% are underrepresented in medicine	
■ 56% are female, 44% are male	
■ Overall average GPA is 3.71	} Above National Average
■ Average MCAT score is 31	

* Preliminary Data

[Figure 4: 2009 First-year medical student statistics]

TOTAL STUDENT ENROLLMENT Medical, Graduate and Allied Health		
	2008	2009
Medical (MD)	616	631
MD/PhD	34	32
Graduate (MS/PhD)	303	318
Genetic Counseling (MS)	11	12
Medical & Research Tech (BS/MS)	87	78
Physical Therapy (DPT/PhD)	201	180
Public Health (MPH)	18	37
Total	1,270	1,288

[Figure 5: Total student enrollment]

STUDENT DIVERSITY*		
	2008	2009
Program	% Minority	
Medical (MD)	15%	14%
Graduate (MS/PhD)	14%	15%
Physical Therapy	6%	7%
Medical & Research Technology	39%	40%
We continue to make significant strides in increasing the diversity of our faculty, staff and students.		

* Includes Native American, African American, Hispanic American

[Figure 6: Student diversity]

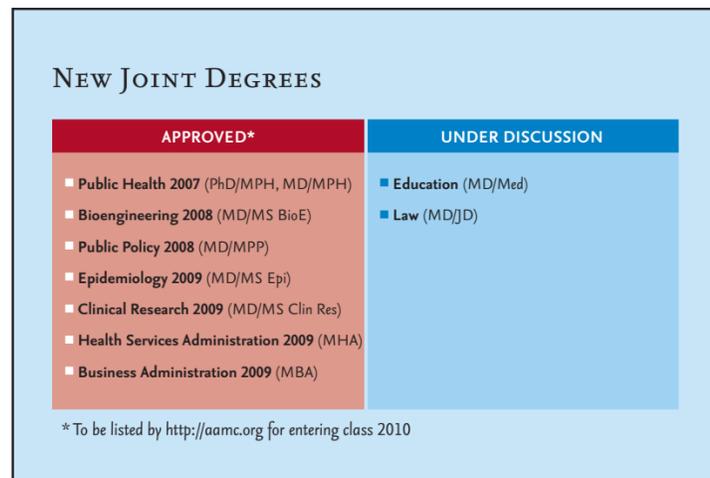


The dean's senior leadership team.

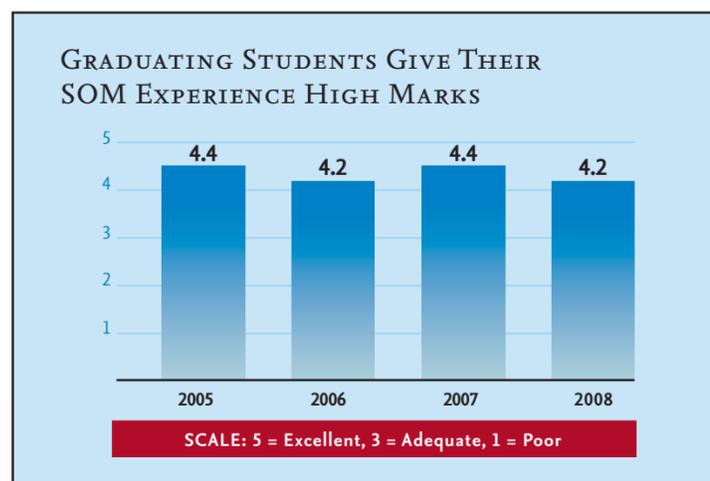
We have responded to increased interest among our student body for a more diverse or pluralistic approach to medicine with a series of joint degree programs (figure 7). Many students have a primary interest in medicine (MD degree) but have a diversity of other interests, perhaps in public health, business or public policy. **Therefore, in addition to our existing MD/PhD program, we now have seven additional master's degree programs.**

All medical students across the nation are required by the Associates of the American Medical Colleges to complete a questionnaire called the Student Graduate Questionnaire (figure 8). This questionnaire asks students to assess their experiences at medical school, the results of which are taken into consideration during reaccreditation by the Liaison Committee for Medical Education. We are very pleased that our students consistently rank us highly.

Two of the most important days in a medical student's life are Match Day and graduation. Last year, 36 percent of our medical students matched in primary care fields (figure 9). The remainder matched primarily into surgery or surgical specialties, which is consistent with what is happening around the nation.



[Figure 7: New joint degree programs]

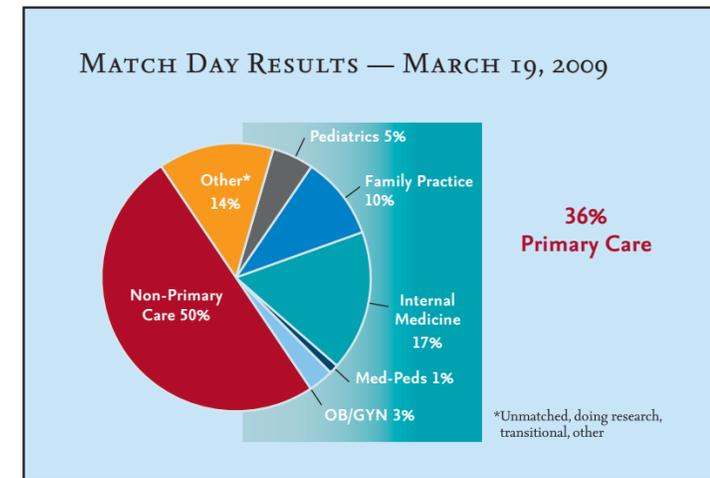


[Figure 8: Graduating student questionnaire results]

Last year we graduated 234 students, the majority of whom were medical students (figure 10).

Anthony S. Fauci, MD, director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health (NIH) served as the 2008 convocation keynote speaker. He received the Dean's Distinguished Gold Medal for Biomedical Research at the convocation ceremonies on May 15 (figure 11).

“Two of the most important days in a medical student's life are Match Day and graduation.”



[Figure 9: Match Day results]

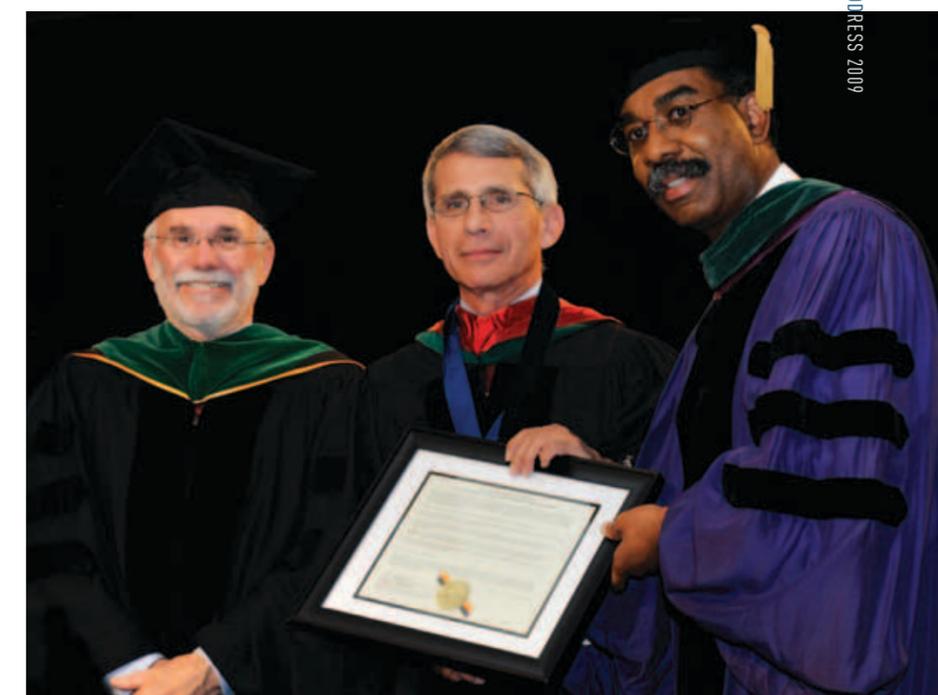
GRADUATION STATISTICS

PROGRAM	2008	2009
MD	141	135
MD/PhD	5	5
Physical Therapy	52	46
Genetic Counseling	5	5
Medical & Research Technology	21	37
Public Health	6	6
Total Graduates	230	234

[Figure 10: 2009 graduation statistics]

[Figure 11: (L-R) Myron M. Levine, MD, DTPH, Anthony S. Fauci, MD, director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health, and Dean E. Albert Reece, MD, PhD, MBA, at convocation.]

opposite page: Class of '13 at the White Coat Ceremony with Dean Reece (center), who is flanked by senior dean's office leadership: Executive Vice Dean Bruce Jarrell and Associate Dean for Student Affairs Donna Parker (far right) and Assistant Deans for Student Affairs Joe Martinez and Gina Perez (far left).





“ I am so very proud of our faculty, staff and fellows, all of whom deserve great praise for their exceptional efforts in securing highly competitive extramural funding achieving a total of **\$425.8 million** during these exceedingly challenging times.”

RESEARCH »

The majority of research funding to academic medical centers in the United States comes from the National Institutes of Health (NIH). In 2003, Congress allocated \$27 billion to the NIH, and, based upon expected growth by inflation, the allocation in 2009 should have been \$33 billion. The reality is that growth did not equal inflation, and the allocation for 2009 was only \$30 billion. Institutions such as ours were therefore challenged to excel with less, and competition for these limited funds was extremely stiff.

We fared well under those stringent conditions. In fiscal year 2008 we saw a 10 percent increase in research grants and contracts, and this year we had an unprecedented 13 percent increase (figure 12). Our faculty generated \$425.8 million in research grants and contracts. It is particularly important to note that this figure does not include new stimulus grant funds.

I am so very proud of our faculty, staff and fellows, all of whom deserve great praise for their exceptional efforts in securing highly competitive funding during these exceedingly challenging times.

Our researchers are very successful in securing major grants and they also are successful in achieving major discoveries, for which they apply for and secure patents.

This past year 170 new patent applications were filed. We also obtained 40 new worldwide patents. Sixty-five percent of our total portfolio is currently under development by industry in a translational manner, and approximately 100 new innovations are added to our portfolio on an annual basis.

This demonstrates that our science has the potential of having a quantifiable impact on human health.



[Figure 12: Total grants and contracts 2000-2009]

RESEARCH HIGHLIGHTS» TOP GRANT AWARDEES IN 2009

This section features the outstanding work of just a few of our investigators who secured very large and prestigious grants last year. Featured here are investigators who received NIH grants, non-NIH grants, multiple NIH ROI grants, and NIH program project and center grants.



Figure 13: Claire Fraser-Liggett, PhD, professor, Department of Medicine, and director, Institute for Genome Sciences, received a five-year \$20 million grant from the National Institute of Allergy and Infectious Diseases to establish a Genomic Sequencing Center for Infectious Diseases.



Figure 14: Thomas MacVittie, PhD, professor, Department of Radiation Oncology, received a one-year \$18.3 million grant from the National Institute of Allergy and Infectious Diseases for his work on radioactive threats in biowarfare.



Figure 15: Thomas Pallone, MD, professor, Department of Medicine, received a four-year \$3.3 million grant from the National Institute of Diabetes and Digestive Kidney Diseases for his work on microvascular transport in renal medulla.



Figure 16: Joseph Cheer, PhD, assistant professor, Department of Anatomy & Neurobiology, received a four-year \$2.1 million grant from the National Institute of Allergy and Infectious Diseases for his work on endogenous cannabinoid control of reward substrates.



Figure 17: William Blattner, MD, professor, Departments of Medicine, and associate director, Institute of Human Virology, received a one-year \$56 million award from the Centers for Disease Control and Prevention for his work in HIV/AIDS prevention.



Figure 18: Robert Redfield, MD, professor, Department of Medicine and Institute of Human Virology, received a one-year \$25.3 million award from the Health Resources and Services Administration for his work on rapid expansion of HIV+ persons in Africa through the President's Emergency Plan for AIDS Relief (PEPFAR).



Figure 19: Myron M. Levine, MD, DTPH, Simon and Bessie Grollman Distinguished Professor, Department of Medicine, and director, Center for Vaccine Development, received a two-year \$2.2 million award from the Program for Appropriate Technology and Health (PATH) for a clinical trial on the shigella flexneri live oral vaccine.

MULTIPLE NIH ROI GRANTS AWARDEES »

Several of our investigators have received multiple R01 grants from the NIH, which is a tremendous accomplishment:



Figure 20: Geoffrey Schoenbaum, MD, PhD, professor, Department of Anatomy & Neurobiology, has received five R01 grants totalling \$1,315,818.



Figure 21: Richard Eckert, PhD, professor and chair, Department of Biochemistry & Molecular Biology, has received four R01 grants totalling \$1,405,385.



Figure 22: James Gold, PhD, professor, Department of Psychiatry, has received three R01 grants totalling \$2,264,645.



Figure 23: Patricio O'Donnell, MD, PhD, professor, Department of Anatomy & Neurobiology, has received three R01 grants totalling \$1,681,636.



Figure 24: David Scott, PhD, professor, Department of Surgery, and Center for Vaccine Development, has received three R01 grants totalling \$1,444,268.

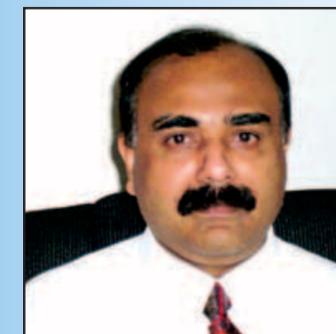


Figure 25: Anil Jaiswal, PhD, professor, Department of Pharmacology & Experimental Therapeutics, has received three R01 grants totalling \$1,319,919.

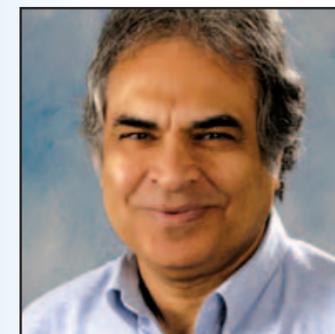


Figure 26: Abdu Azad, PharmD, PhD, MPH, professor, Department of Microbiology & Immunology, has received three R01 grants totalling \$1,226,544.



Figure 27: James Kaper, PhD, professor and chair, Department of Microbiology & Immunology, has received three R01 grants totalling \$1,289,918.

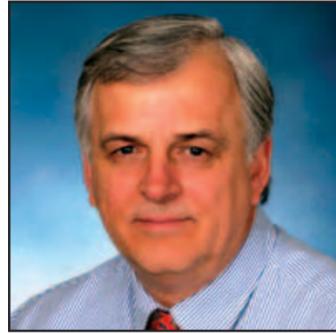


Figure 28: C. David Pauza, PhD, professor, Department of Medicine and Institute of Human Virology, has received three R01 grants totalling \$1,045,941.



Figure 29: Lai-Xi Wang, PhD, professor, Department of Biochemistry & Molecular Biology, has received three R01 grants totalling \$753,940.



Figure 30: J. Marc Simard, MD, PhD, professor, Department of Neurosurgery, has received three R01 grants totalling \$967,263.

NIH PROGRAM PROJECT AWARDEES »

NIH program project and center grants are the premier grants from the NIH. Program project grants are large, multi-project efforts that generally include a diverse array of research activities.



Figure 31: Brian Berman, MD, professor, Department of Family & Community Medicine and director, Center for Integrative Medicine, received a \$6.6 million grant for his work on arthritis and traditional Chinese medicine.



Figure 32: William Stanley, PhD, professor, Department of Medicine, received an \$11.2 million grant for research into cardiac energy metabolism in heart failure.



Figure 33: Mordecai Blaustein, MD, professor, Department of Physiology, received \$8.3 million to study Na⁺, CA2⁺, arterial contractility and ouabain hypertension.



Figure 34: Dudley Strickland, PhD, professor, Department of Surgery, and director, Center for Vascular & Inflammatory Diseases, received \$7.8 million for his work on information signaling pathways in the vasculature.

NIH CENTER GRANTS AWARDEES »

Center grants are awarded to institutions on behalf of program directors and groups of collaborating investigators. They support long-term, multi-disciplinary programs of research and development.



Figure 35: Alan Shuldiner, MD, John L. Whitehurst Professor, Department of Medicine, and director, Program in Genetics and Genomic Medicine, received \$6.7 million for the Clinical Nutrition Research Unit of Maryland. Dr. Shuldiner also received \$13.3 million for the University of Maryland Multidisciplinary Clinical Research Career Development Program.



Figure 37: Kevin Cullen, MD, professor, Department of Medicine, and director, University of Maryland Marlene and Stewart Greenebaum Cancer Center, received \$4.4 million for the University of Maryland Greenebaum Cancer Center support grant.



Figure 38: Andrew Goldberg, MD, professor, Department of Medicine, and co-director, Center for Research on Aging, received \$4.9 million for the Claude D. Pepper Older Americans Independence Center.



Figure 39: William Carpenter, MD, professor, Departments of Psychiatry, and director, Maryland Psychiatric Research Center (MPRC), received a \$9.9 million grant for the MPRC Center for Intervention Development and Applied Research.



Figure 40: Myron M. Levine, MD, DTPH, Simon and Bessie Grollman Distinguished Professor, Department of Medicine, and director, Center for Vaccine Development, received a \$43 million grant for the Middle Atlantic Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research.



Figure 41: Marcelo Sztein, PhD, professor, Department of Pediatrics, received a \$14.8 million grant for CCHI: Mucosal Immunity, Vaccines and Microbiota Interplay in Humans and Animal Models.

Research dollars secured competitively are considered as a surrogate for excellence because they reflect the quality of the programs at each institution and the strength and caliber of investigators who conduct these research projects.

There are a number of research ranking methodologies, some of which use subjective means, while others use objective means. We prefer to use objective criteria, namely research dollars.

The Association of American Medical Colleges provides a profile of medical schools each year based upon, among other factors, their total grants and contracts direct expenditures. In 2007 we were ranked #19 among all 131 public and private institutions; this year (2008) we moved up one spot to #18 (Figure 42). Among all 76 public medical schools, last year (2007) we were ranked #7; this year (2008) we moved up one spot to #6 (Figure 43). We continue our rise toward the top 10 percent of all medical schools and the top five percent of public medical schools.

AAMC MEDICAL SCHOOL PROFILE SYSTEM 2008
6th Out of All 76 Public Medical Schools (top 10%)

Rank	School	Research	Rank	School	Research
1.	U Washington	\$628,358,572	6.	Maryland	\$290,375,018
2.	UCSF	\$619,527,094	7.	Michigan	\$259,405,564
3.	UCLA-Geffen	\$445,267,939	8.	Alabama	\$242,955,451
4.	Colorado	\$335,815,763	9.	North Carolina	\$227,998,723
5.	UCSD	\$329,905,831	10.	UT Southwestern	\$219,919,053

We moved up to #6!

[Figure 42: SOM ranking among public medical schools]

AAMC MEDICAL SCHOOL PROFILE SYSTEM 2008
18th Out of all 131 Public and Private Schools (top 15%)

Rank	School	Grants & Contracts	Rank	School	Grants & Contracts
1.	Harvard	\$1,458,375,652	11.	Yale	\$361,168,074
2.	U Washington	\$628,358,572	12.	Washington St. Louis	\$356,101,767
3.	UCSF	\$623,498,989	13.	Colorado	\$327,569,949
4.	UCLA-Geffen	\$495,267,939	14.	UCSD	\$329,905,831
5.	Johns Hopkins	\$484,465,130	15.	Stanford	\$313,103,321
6.	Duke	\$482,504,735	16.	Case Western	\$298,383,387
7.	Pennsylvania	\$468,956,289	17.	Baylor	\$294,204,448
8.	Columbia	\$460,945,503	18.	Maryland	\$290,375,018
9.	Mount Sinai	\$400,588,828	19.	Michigan	\$259,405,564
10.	Pittsburgh	\$388,397,076	20.	Vanderbilt	\$258,583,563

We moved up to #18!

[Figure 43: SOM ranking among all 131 public and private medical schools in the US]



DISCOVERY AND INNOVATION

The University of Maryland School of Medicine continually makes discoveries and develops new innovations that impact patients' lives in Maryland, the nation and abroad. A few highlights from the last year:



[Figure 44: Karen Kotloff, MD]

(Figure 44) Karen Kotloff, MD, professor, Department of Pediatrics, was the principal investigator of the H1N1 (swine flu) clinical trials.

Our Center for Vaccine Development was the lead center in the United States in the first clinical trial testing the safety and efficacy of a vaccine to protect against H1N1. The trial, which tested a vaccine made by pharmaceutical manufacturer Sanofi Pasteur, also took place at Duke University and Vanderbilt University. Dr. Kotloff and her colleagues tested over 1000 patients, adults and children, in August and September, and determined that the vaccine is indeed safe and effective.



[Figure 45: David Weber, PhD]



[Figure 46: Edward Sausville, MD, PhD]

(Figure 45) David Weber, PhD, professor, Department of Biochemistry & Molecular Biology, developed a novel designer cancer drug for which (Figure 46) Edward Sausville, MD, PhD, professor, Department of Medicine, is conducting a clinical trial.

A small molecule was found to bind a growth factor in melanoma, S100B, with the goal of restoring normal tumor suppressor function in this deadly cancer. The drug is given only to patients with elevated levels of the S100B tumor marker as part of a personalized medicine approach. This is an example of translational research – transitioning from a basic science laboratory to the clinic – which directly impacts patients' lives from “the bench to the bedside.”



[Figure 47: Johannes Bonatti, MD]

(Figure 47) Johannes Bonatti, MD, professor, Department of Surgery, was recently recruited to Maryland from Austria. This past spring, Dr. Bonatti and his team performed a rare triple bypass heart surgery using robotic assistance.

This procedure, which does not require any large incisions, presents a durable alternative to open heart surgery for patients with multiple blocked coronary arteries. With this minimally invasive procedure, patients have a much shorter recovery time and return to their normal lives much sooner.

The University of Maryland is only the second institution in the United States to have performed robot-assisted triple bypass surgery and the first in the world to achieve the triple bypass using an advanced, minimally-invasive heart-lung machine.

CLINICAL »

Patient care is obviously a very important part of what we do every day. Our faculty members deliver patient care through our practice plan, University Physicians Inc. (UPI). UPI generates clinical dollars to support the salaries and the operation of our organization. UPI generated \$194 million in revenues in FY08, an 11 percent increase over the previous year (Figure 48), and this year we had an eight percent increase for a total of \$210 million, which is an outstanding performance in this difficult fiscal environment. Our clinical faculty deserve a great deal of credit for this outstanding performance.

Our clinical faculty treated over one million patients, a two percent increase over the previous year (Figure 49). The faculty admitted to the University of Maryland Medical Center, our clinical partner, nearly 36,500 patients, a one percent increase, while inpatient surgeries saw an increase of three percent. It is evident that in our clinical programs growth continues, albeit modestly, which is a very positive development, particularly given that patient admissions are down throughout the United States.

Practice plan performance can be assessed by an analysis of effective billing and collecting for services. One of the national benchmarks used are days in accounts receivable. We went from 53 days down to 48 days in accounts receivable, which is an all-time record (Figure 50). Accounts receivable of greater than 90 days is down to 25 percent, and our initial denial rate for invoices is under 7.5 percent. These are extraordinary numbers using national benchmarks. Our clinical faculty, billing staff and Bill Tucker, UPI's chief corporate officer (Figure 51), deserve tremendous credit for this outstanding performance.



[Figure 51: Bill Tucker]



[Figure 48: Practice plan performance]

	FY08	FY09	change
Total Patient Volumes	1,013,732	1,053,359	↑ 2%
Admissions	35,982	36,447	↑ 1%
Inpatient Surgeries	13,152	13,497	↑ 3%

[Figure 49: Patient care statistics]

	FY08	FY09	change
Days in Accounts Receivable	53	48	↓ 5 days
Accounts Receivable >90 days	25.6%	25.3%	↓ 0.3%
Initial Denial Rate	8.2%	7.5%	↓ 0.7%

Outstanding Practice Plan Performance

[Figure 50: Key indicators for billing and collections]

PARTNERSHIP AND RECOGNITION

The School of Medicine's partnership with the University of Maryland Medical Center and Medical System has never been stronger. This is evident by the national recognition The medical center and our clinical faculty received in the last year:

» Our cancer, ear, nose and throat, kidney disease, urology and respiratory disease programs are among the 50 best in the country according to the U.S. News and World Report's annual "Best Hospitals" survey.

» For the second year in a row, the University of Maryland Medical Center is one of the nation's 100 Top Hospitals for cardiovascular care, according to a study by Thomson Reuters, which provides healthcare research for businesses and professionals.

» For a third year in a row, the Leapfrog Group has named the University of Maryland Medical Center as one of the nation's best acute-care hospitals for patient safety and quality of care. This prestigious recognition was awarded to only 26 acute care hospitals and seven children's hospitals nationwide.

» The University of Maryland Medical Center achieved Magnet Status, which is awarded by the American Nurses Credentialing Center (ANCC) to hospitals that meet specific criteria for nursing professionalism, teamwork and the highest standards in patient care. Only about five percent of hospitals across the United States have this prestigious designation.

» Our Hospital for Children is the first on the East Coast to earn a prestigious "Gold Seal of Approval" from The Joint Commission for its pediatric asthma program. The certification is an optional level of approval that the Joint Commission provides for certain "disease-specific centers," or DSC, within a medical center. The University of Maryland Medical Center also won recertification as a Primary Stroke Center through the DSC program. The stroke certification initiative is a nationwide effort to improve the care of stroke patients by assuring that qualified practitioners are available at certified hospitals.

» Our Cardiac Care Unit has received the Beacon Award for Critical Care Excellence from the American Association of Critical-Care Nurses (AACN). The award recognizes the top intensive care units in the country. To receive the award, intensive care units must meet rigorous criteria for excellence, exhibiting high-quality standards and exceptional care for patients.

» The University of Maryland Medical Center is the only Maryland hospital to receive Blue Cross and Blue Shield's Blue Distinction Centers for Specialty Care recognition in four areas: bariatric surgery, cardiac care, complex and rare cancers and transplants. The designation is based on rigorous, clinically meaningful measures established in collaboration with expert physicians' and medical organizations' recommendations.

Below: Davidge Hall (right), built in 1812, and the University of Maryland Medical Center's Gudelsky Building (left) represent the past and present of academic medicine in Maryland.

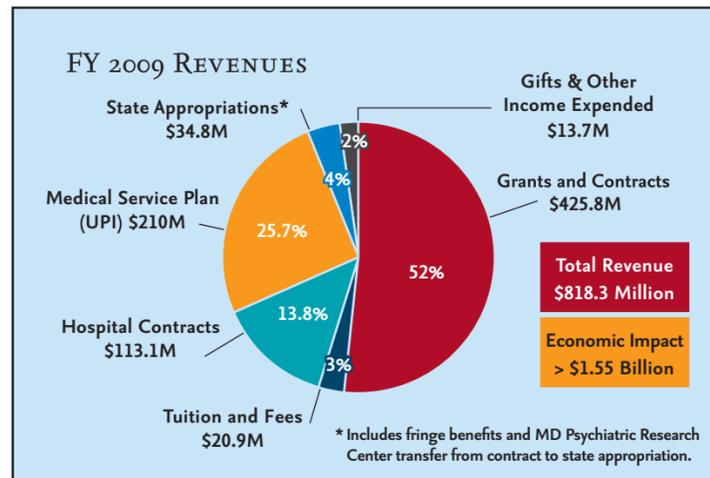


FINANCE & PHILANTHROPY »

The medical school's total revenue was \$818 million, with an economic impact to the state of \$1.55 billion (Figure 52). More than half of our income (52 percent) is from grants and contracts. The other large component (38 percent) comes from clinical activities such as hospital contracts and the medical service plan. A much smaller amount is generated by gifts (two percent), tuition (three percent) and state appropriations (four percent). All of these categories had significant increases over the last year with the exception of state appropriations, which decreased by two percent (Figure 53).

The economic impact of the medical school, the medical center and the medical system is quite impressive (Figure 54). As mentioned earlier, the School of Medicine's economic impact on the state is \$1.55 billion. The University of Maryland Medical Center has an economic impact of \$2 billion and the other 10 medical system hospitals' economic impact is \$1.4 billion. Thus, the medical school's and medical system's combined economic impact on the state of Maryland is nearly \$5 billion.

Private gifts and endowments have always been a very important part of the revenue pie for academic medical centers, but in today's economic environment, particularly, philanthropy becomes even more imperative our success. In fiscal year 2008 we raised \$49 million, a seven percent increase over the previous year (Figure 55). This year, in spite of the depressed economy, we had our best year ever – we raised almost \$54 million, a 9.5 percent increase over the previous year. We did not do as well in our endowment income. While we had a nearly 10 percent increase in private gifts, our endowment income took a 33 percent fall last year (Figure 56). The good news is that things are beginning to rebound and our endowment portfolio is increasing, and we hope it will be restored to where it was or better in the not too distant future.



[Figure 52: FY 2009 revenues]

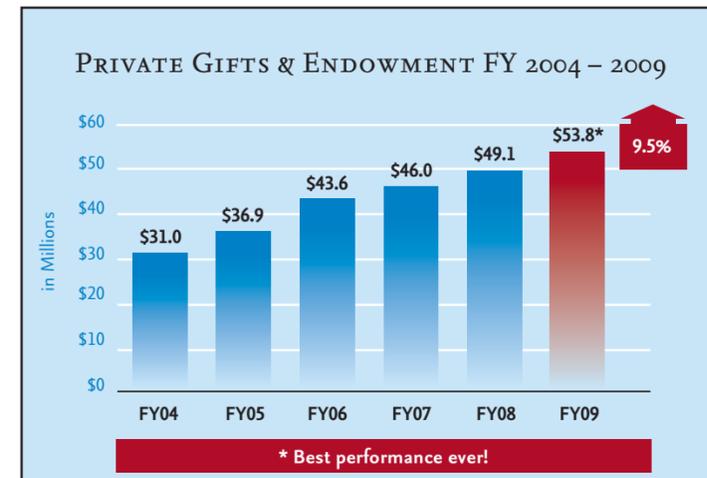
	FY08	FY09	change
Grants & Contracts	\$377	\$425.8	↑ 13%
Tuition & Fees	\$19.6	\$20.9	↑ 6.6%
Medical Service Plan (UPI)	\$194.5	\$210.0	↑ 8%
Gifts & Other Income (Expended)	\$11.5	\$13.7	↑ 19%
Affiliated Hospitals	\$96.3	\$113.1	↑ 7.1%
State Appropriations	\$35.6	\$34.8	↓ 2.2%

[Figure 53: FY 2009 revenues]

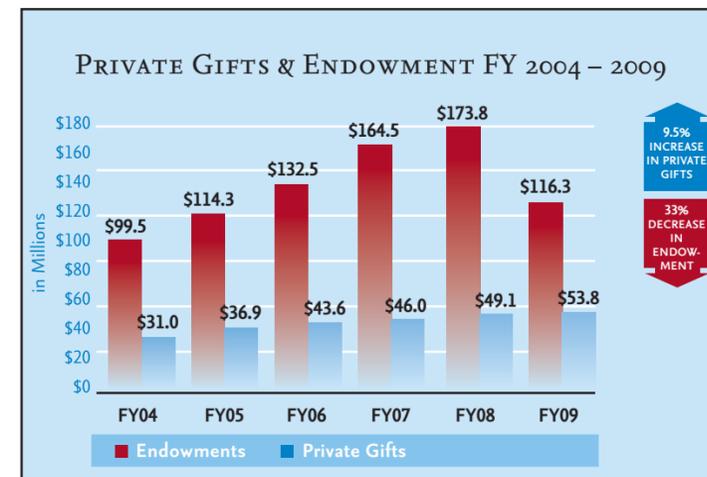
Summary of Direct and Indirect Factors			
Entity	Employment Support*	Employee Compensation	Economic Output
UM School of Medicine ¹	13,190	\$644.0M	\$1,315.7B
UMMC ²	13,208	\$762.4M	\$2,113.6B
Other UMMS Hospitals ²	11,316	\$575.4M	\$1,433.7B
SOM & UMMS	37,714	\$1,981.8B	\$4,863B

¹ RIMS II statistical model used for UMB and professional schools, Jacob France Institute, 2008
² IMPLAN statistical model used for UMMC and UMMS Economic Output Assessment based on 2008 data
 * Includes employees of UMMS and SOM as well as job indirectly created or supported by these institutions.

[Figure 54: Economic impact to the state of Maryland]



[Figure 55: Private gifts and endowment by year]



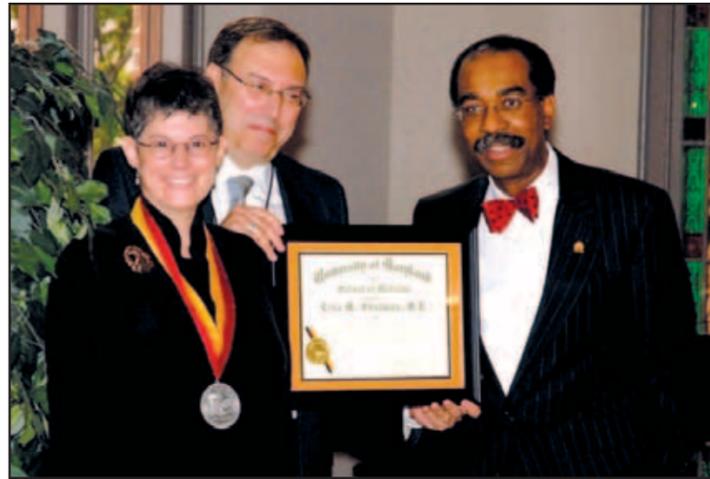
[Figure 56: Private gifts and endowment by year]

DONOR	Amount	Recipient
Norton A. Foxman*	\$2,500,000	Radiation Oncology
The Hales Family Foundation*	\$2,500,000	Surgery
Dr. Lillian Blackmon Crenshaw*	\$2,000,000	OB-GYN & Pediatrics
Anonymous Donor	\$892,500	Center for Integrative Medicine
John W. Kluge Foundation	\$500,000	Center for Integrative Medicine
William G. McGowan Charitable Fund	\$330,000	Surgery
Dr. Gladys E. Wadsworth	\$256,051	Physical Therapy & Rehabilitation Science
Anonymous Donor	\$250,000	Trauma
Thomas M. Scalea, MD	\$250,000	Trauma
Total: \$9.5 Million		

* These FY2009 gifts were announced in 2008

[Figure 57: FY2009 top philanthropic gifts]

“ We are extremely grateful to our major donors – individuals and foundations – who last year contributed \$53.8 million and helped make 2009 a most successful year in fundraising (Fig.55-57). Their generosity enabled the School of Medicine to fund chairs and professorships and support faculty research programs.”



[Figure 58: Lisa Shuman, MD, with William Weiner, MD (center) and Dean E. Albert Reece, MD, PhD, MBA.]



[Figure 59: William Regine, MD, (center) with Mohan Suntha, MD, (left) and Dean Reece.]



[Figure 60: Bartley Griffith, MD, with the Hales Family.]

“The Fund for Medicine Gala raised more than \$242,000 for the School of Medicine.”

This past year we held investiture ceremonies to honor three faculty members: (Figure 58) Lisa Shuman, MD, became the inaugural Brin Professorship in Parkinson’s Disease and Movement Disorders in the Department of Neurology. (Figure 59) William Regine, MD, was named the inaugural Isadore and Fannie Schneider Foxman Endowed Chair in Radiation Oncology.

(Figure 60) Bartley Griffith, MD, became the inaugural Thomas E. and Alice Marie Hales Distinguished Professor in Transplant Surgery.

We also held several other special events, including our annual Fund for Medicine Gala in March. Chaired by Dr. and Mrs. Robert Fischell, the gala raised more than \$242,000 for the School of Medicine. The highlight of the evening was a special investiture ceremony for 20 previously endowed chairs and professors who received medals to recognize their accomplishments and those of their donors (Figure 61). The front of the medal features the image of Dr. John Beale Davidge, a founder and the first dean of the school and the namesake of historic Davidge Hall (Figure 62). The back of the medal lists the four tenets of the School of Medicine’s mission – education, research, patient care and service – as well as the official name of the endowed professorship.



[Figure 62: The front of the medal endowed faculty receive at their investiture ceremony.]



[Figure 61: Honorees at the Fund for Medicine Gala]

The 20 endowed professors and chairs who received medals at the ceremony were:

Stephen T. Bartlett, MD, the Barbara Baur Dunlap Professor in Transplantation Surgery

Cynthia F. Bearer, MD, PhD, the Mary Gray Cobey Professor in Neonatology

Maureen M. Black, PhD, the John A. Scholl, MD and Mary Louise Scholl, MD Professor in Pediatrics

Frank M. Calia, MD, MACP, the Theodore E. Woodward Chair in Medicine

Richard L. Eckert, PhD, MS, the John F.B. Weaver Professor

Howard M. Eisenberg, MD, the R.K. Thompson, MD Chair in Neurosurgery

Anthony A. Gaspari, MD, the Albert Shapiro, MD Professor in Dermatology

Myron M. Levine, MD, DTPH, the Simon and Bessie Grollman Distinguished Professor

Mandeep R. Mehra, MBBS, FACC, FACP, the Dr. Herbert Berger Professor in Medicine

Reuben S. Mezrich, MD, PhD, FACR, the Dr. John M. Dennis Chair in Radiology

Adrian Park, MD, FRCS(C), FACS, the Campbell and Jeanette Plugge Professor in Surgery

Vincent D. Pellegrini, Jr, MD, the James Lawrence Kernan Professor and Chair in the Department of Orthopaedics

Jean-Pierre Raufman, MD, the Moses Paulson, MD and Helen Golden Paulson Chair in the Division of Gastroenterology

E. Albert Reece, MD, PhD, MBA, the John Z. and Akiko K. Bowers Distinguished Professor and Dean

Peter Rock, MD, MBA, the Dr. Martin A. Helrich Chair for Anesthesiology

Mary M. Rodgers, PT, PhD, the George R. Hepburn Dynasplint Professor in Physical Therapy and Rehabilitation Science

Thomas M. Scalea, MD, FACS, the Francis X. Kelly Professor of Trauma Surgery

Michael T. Shipley, PhD, the Donald E. Wilson, MD, MACP Distinguished Professor

Alan R. Shuldiner, MD, the John L. Whitehurst Professor of Medicine

Susan D. Wolfsthal, MD, the Celeste Lauve Woodward, MD Professor in Humanism and Ethical Medical Practice

A special scientific symposium and gala were held in May to commemorate the 25th anniversary of Dr. Robert Gallo’s Science magazine publication identifying HIV as the cause of AIDS, which is widely recognized as one of the most important scientific discoveries in history (Figure 63).

Dr. Gallo also led the team that developed the blood test for AIDS, saving countless lives by preventing new infections. The blood test for antibodies to HIV, was another important component that linked HIV to AIDS. Dr. Gallo is a professor in the Department of Medicine and the director of our Institute of Human Virology.



[Figure 63: Robert Gallo, MD at the May gala]

Davidge Hall, built in 1812, is recognized as the oldest medical facility in the northern hemisphere used continuously for medical education, and is a National Historic Landmark.



FACULTY HIGHLIGHTS »

This section features a selection of faculty and staff who received leadership appointments and prestigious honors and special recognition over the past year.



Figure 64: Sanford Stass, MD, professor and chair, Department of Pathology, was named **chair of the Department of Medical and Research Technology (DMRT)**. He began his tenure on April 1, 2008, after serving for several years as the interim chair of DMRT. He will remain as chair of the pathology department. Dr. Stass, a well-established, well-recognized scientist in the molecular biology of cancer, is also very well-published, and has **\$2.6 million** in National Cancer Institute funding.

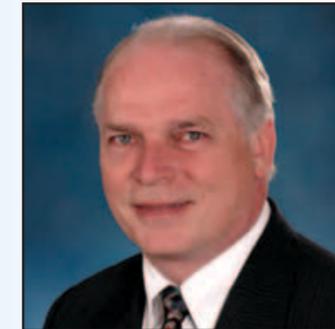


Figure 65: Brian Browne, MD, was appointed **chair of the Department of Emergency Medicine**, after serving in an interim capacity for several years. He also began his tenure on April 1, 2008. Dr. Browne directs the statewide network of emergency medical services at hospitals throughout the state. He designed and now co-directs Express Care, a statewide network of ambulances that transport critically ill patients from throughout the state to the University of Maryland Medical Center. He is the founding member of the Academy of Emergency Medicine.

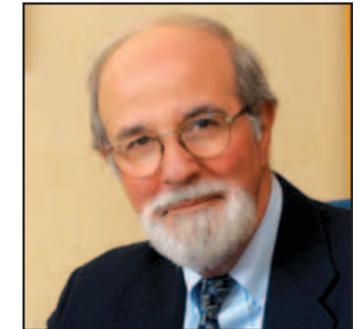


Figure 66: Frank M. Calia, MD, MACP, professor and chair, Department of Medicine, was appointed **vice dean for Clinical Affairs**. Dr. Calia vacated the chairmanship of medicine in December. In his new position, he will explore new program developments and work to create new initiatives to enhance the School of Medicine's clinical affairs effort. He will work closely with School of Medicine department chairs to strengthen clinical care within the entire medical enterprise. Dr. Calia also received the **2008 Founders Day Teacher of the Year Award**.



Figure 67: Mandeep Mehra, MBBS, FACC, FACP, the Dr. Herbert Berger Professor in Medicine, and head, Division of Cardiology, has been appointed **assistant dean for Clinical Services**. Dr. Mehra will work to ensure patients have the greatest access possible to the various faculty practices of the School of Medicine. He will be charged with enhancing the efficiency and effectiveness of the process that smoothly facilitate access for patients from external institutions and locations, especially medical system institutions, into the faculty practices and the medical center.

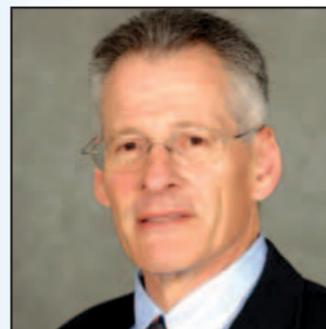


Figure 68: Alan Faden, MD, has been appointed professor, Department of Anesthesiology, and **founding director of the new University of Maryland Shock, Trauma and Anesthesiology Research (STAR) Center**. An expert in brain injury research, Dr. Faden was most recently at Georgetown University. He brought **\$7 million** in research funding and a 15-member research team to the University of Maryland. Dr. Faden's appointment was effective July 1, 2009.

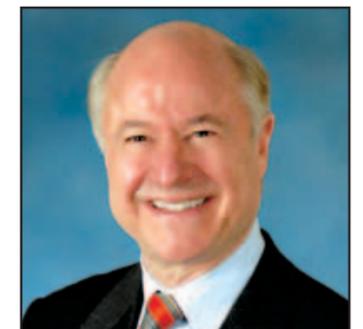


Figure 69: Curt Civin, MD, was appointed professor, Department of Pediatrics, associate dean for Research, and **founding director of our new Center for Stem Cell Biology & Regenerative Medicine**, effective February 1, 2009. A pioneer in cancer and stem cell research, Dr. Civin was recruited from Johns Hopkins University. He brought his entire research team and **\$4 million** in research funding to the University of Maryland.



Figure 70: Stephen Davis, MD, our most recent appointment, has been named the **Theodore E. Woodward Professor and Chair, Department of Medicine**. Dr. Davis comes to Maryland from Vanderbilt University. He is world-renowned for his work in diabetes and metabolic disorders. He brought his research team and **\$10 million** in extramural funding.



Figure 71: Dennis Narango, MA, was named **associate dean for Development** and chief development officer in October 2008. Mr. Narango led the development office on an interim basis for nine months and was chosen as the permanent associate dean after a national search.

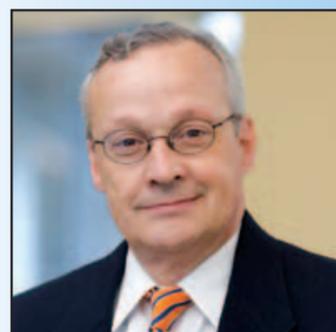


Figure 72: J. Marc Simard, MD, PhD, professor, Department of Neurosurgery, received the **2008 Founders Day Entrepreneur of the Year Award**.

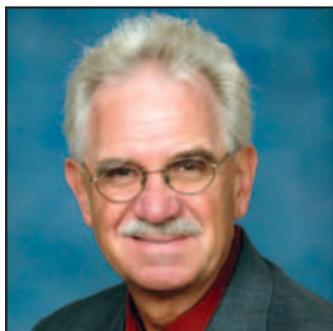


Figure 73: Kenneth Fahnstock, administrator, Department of Physiology, received the **2008 Founders Day Public Servant of the Year Award**.



Figure 74: Stephen T. Bartlett, MD, Barbara Baur Dunlap Professor and Chair, Department of Surgery, received the **2009 University System of Maryland Board of Regents Faculty Award for Excellence in Public Service**, the highest honor the Board of Regents bestows to recognize exemplary faculty achievement. In addition, Dr. Bartlett was **elected by the faculty to the post of medical staff president** of the University of Maryland Medical Center for 2009-2011.



Figure 75: Bruce Jarrell, MD, MACP, executive vice dean and professor, Department of Surgery, was **selected by the graduating medical students to address the graduating class at the 2008 convocation ceremony**.



Figure 76: Larry Anderson, PhD, professor, Department of Anatomy & Neurobiology, was **elected by the graduating medical students to receive the Golden Apple Award – Preclinical**.



Figure 77: Angela Brodie, PhD, professor, Department of Pharmacology & Experimental Therapeutics, **received the Maryland State Council on Cancer Control's Martin D. Abeloff, MD, Award for Excellence in Public Health and Cancer Control**.



Figure 78: Richard Colgan, MD, associate professor, Department of Family & Community Medicine, was **chosen by the graduating medical students to receive the Golden Apple Award – Clinical**.



Figure 79: Mary Rodgers, PT, PhD, George R. Hepburn Dynasplint Professor and Chair, Department of Physical Therapy and Rehabilitation Science, who recently celebrated a decade of leadership as chair of the department, was **selected as a Catherine Worthingham Fellow of the American Physical Therapy Association** for 2009-2010.



Figure 80: Thomas Blanpied, PhD, assistant professor, Department of Physiology, **received the prestigious Presidential Early Career Award for Scientists and Engineers at the White House in December 2008**. The award recognizes his research into the use of imaging to study the connections between neurons.



Figure 81: Robert Gallo, MD, professor, Department of Medicine, and director, Institute of Human Virology, **received:**
 » the **Governor's International Leadership Award** from Governor Martin O'Malley in March at the World Trade Center in Baltimore,
 » the **Sir Alister McIntyre Distinguished Award** in Kingston, Jamaica in March
 » the **2009 Dan David Prize for Future Global Public Health** in Israel in May.



Figure 82: Claudia Baquet, MD, MPH, associate dean for Policy and Planning, professor, Department of Medicine, and director, Program in Minority Health and Health Disparities Education and Research, was **appointed a member of the American Cancer Society's Cancer Action Network Progress Review Group**.



Figure 83: Vincent Pellegrini, MD, James Lawrence Kernan Professor and Chair, Department of Orthopaedics, was **appointed president of the American Orthopaedic Association**, the oldest national orthopaedic association in the world, for the 2009-2010 term.



Figure 84: Alessio Fasano, MD, professor, Department of Pediatrics, and director, Center for Mucosal Biology, was **featured in the August 2009 issue of Scientific American**. The article detailed the history of celiac disease and chronicled the evolution and management of the disorder that affects a person's ability to tolerate gluten.



Figure 85: Claire Fraser-Liggett, PhD, professor, Department of Medicine, and director, Institute for Genome Sciences, **co-authored an article – and was the featured cover story – in the October 9, 2008, issue of Nature** entitled "Comparative Genomics of the Neglected Human Malaria Parasite *Plasmodium vivax*."



Figure 86: Yen-Pei Christy Chang, PhD, assistant professor, Department of Medicine, was the **senior author in an article in the December 29, 2008, issue of *Proceedings of the National Academy of Sciences***, detailing the discovery of a common gene variant that appears to influence people's risk of developing high blood pressure.

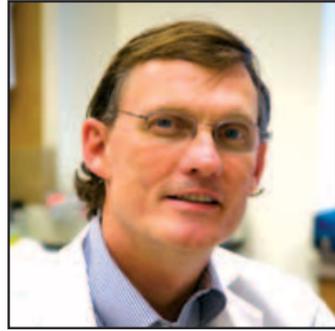


Figure 87: Steven Liggett, MD, professor, Department of Medicine, solved some of the mysteries of the common cold by putting together the pieces of the genetic codes for all the known strains of the human rhinovirus. Dr. Liggett was the **senior author in an article in the February 12, 2009, issue of *Science*** that details the completion of the genomic sequences of the viruses and assembled them into a "family tree," which shows how the viruses are related, with their commonalities and differences.

"Our faculty retention rate remains over 90 percent, which clearly reflects an atmosphere of collegiality and an embracing and enriching work environment."

THREE OF OUR FACULTY WERE NAMED BY GOVERNOR MARTIN O'MALLEY TO SERVE ON THE MARYLAND STATE H1N1 INFLUENZA ADVISORY BOARD:

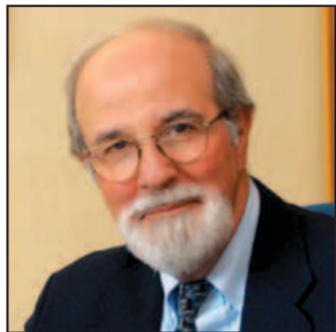


Figure 88: Frank M. Calia, MD, MACP, Theodore E. Woodward Professor and Chair, Department of Medicine and vice dean for Clinical Affairs.



Figure 89: James Nataro, MD, PhD, professor, Department of Pediatrics.



Figure 90: Ina Stephens, MD, assistant professor, Department of Pediatrics.

BOARD OF VISITORS

The Board of Visitors serves in an advisory role to the dean for strategic planning, resource development, public policy research coordination and community outreach.



Figure 91: Robert C. Embry, Jr., president, The Abell Foundation



Figure 92: Robert E. Fischell, ScD, president, Fischell BioMedical, LLC



Figure 93: Harry C. Knipp, MD, FACR, class of '76, founding member, Advanced Radiology, PA



Figure 94: Martin I. Passen, MD, class of '90, president, Medical Alumni Association of the University of Maryland. Founder and director, Center for Medical Weight Loss.

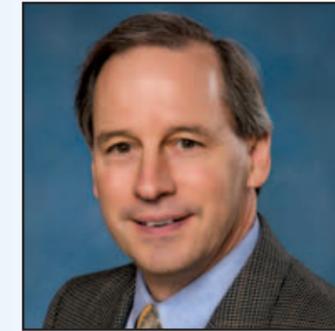


Figure 95: Timothy J. Regan, senior vice president, The Whiting-Turner Contracting Company



Figure 96: Richard L. Taylor, MD, FAAN, class of '75, founding member, Taylor Medical Group

IN MEMORIAM Sadly, a few of our board of visitor members have left us:

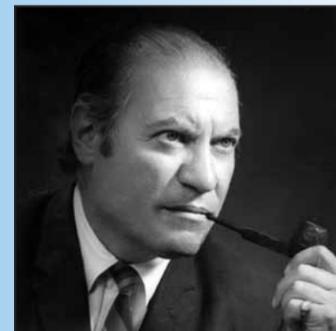


Figure 97: James Frenkil, MD, '37, died on February 7, 2009, at the age of 96. Dr. Frenkil, a pioneer in industrial medicine, conducted research on tropical disease, which led to the use of sulphaguanidine to prevent dysentery. Dr. Frenkil was a member of the School of Medicine's Board of Visitors from 1992 to 1997, a dedicated alumnus and a generous donor. He and his wife Carolyn, who currently serves on our Board of Visitors, established the James and Carolyn Frenkil Endowment Fund to be awarded each year to a medical student who has suffered significant medical problems.

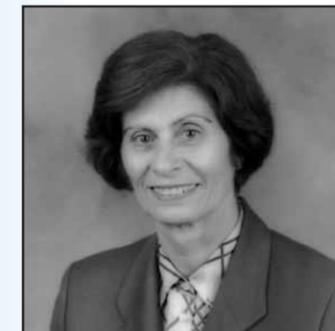


Figure 98: Christine Sarbanes, died on March 22, 2009, at the age of 73. She will be remembered as a steadfast friend of the School of Medicine, serving four terms on our Board of Visitors, from September 1998 until her death. She was honorary chair of the inaugural Fund for Medicine Gala in 2004, and most recently was chair of the nominating committee. She had an abiding interest in Davidge Hall and was instrumental in helping us obtain funding for its conservation from the National Parks Service's Save America's Treasures Program.

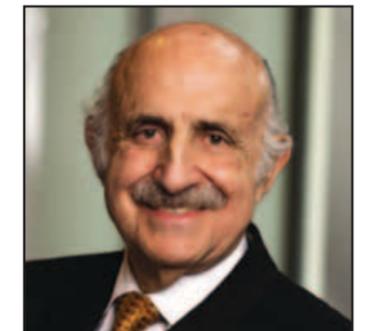


Figure 99: Sylvan Frieman, MD, '53, died on August 22, 2009, at the age of 81. Dr. Frieman, a long-time member and past chair of the Board of Visitors, held faculty appointments at the School of Medicine and was most recently clinical assistant professor in the Department of Obstetrics, Gynecology & Reproductive Medicine. He was a past chair of the University of Maryland Medical Alumni Association and a generous donor. He established the Sylvan and May Frieman Scholarship Fund and the Dr. Sylvan and May Frieman Professorship in Reproductive Endocrinology at the University of Maryland School of Medicine.



MEDIA COVERAGE »

Most of these wonderful success stories contained on these pages have received national, and, in some cases, international media coverage. **Last year the total number of story placements rose by 13 percent to nearly 26,300 (Figure 99). National placements rose by 12 percent to nearly 24,000, while television placements rose by 36 percent to 8,000. We saw an incredible rise in internet placements, with a 76 percent increase over last year.** This is an enormous amount of coverage, and is due to the hard work and tremendous discoveries of our faculty and staff, and I am so pleased that they are recognized for their efforts.

There were two stories that garnered the most media in the last year. The number two top news story featured the work of Stephen Liggett, MD, professor, Department of Medicine (Figure 100), and Claire Fraser-Liggett, PhD, professor, Department of Medicine, and director, Institute for Genome Sciences (Figure 101). **Their work sequencing the genome of the common cold for the first time was featured in over 300 media outlets, including CNN, ABC World News Tonight, Good Morning America, the New York Times, the Wall Street Journal, and many other outlets all over the world.**

The number one top news story featured the work of Michael Miller, MD, professor, Department of Medicine, and director, Center of Preventive Cardiology (Figure 102). **His study, showing that listening to one's favorite music improves blood vessel function in the heart, was featured in over 400 media outlets world-wide including ABC News, CNN, Fox News, National Public Radio, and the Wall Street Journal, among many, many others worldwide.**

MEDIA COVERAGE* OF FACULTY, STAFF, & STUDENTS

	2008	2009	change
Total # of Story Placements	23,206	26,285	↑ 13%
National Stories	21,227	23,779	↑ 12%
Television Placements	5,938	8,064	↑ 36%
Internet Placements	2,840	4,992	↑ 76%

Excellent Media Coverage Continues

* Media Relations is a joint effort of the SOM and UMMC

[Figure 99: Total number of story placements]



[Figure 100: Stephen Liggett, MD]



[Figure 101: Claire Fraser-Liggett, PhD]



[Figure 102: Michael Miller, MD,]

“We saw an incredible 76 percent rise in internet placements over the last year.”

“Greatness is not where we stand, but in what direction we’re moving. We must sail sometimes with the wind and sometimes against it, but sail we must, and not drift or lie at anchor.”

— Oliver Wendell Holmes (1809-1894)

FUTURE PRIORITIES »

As I look ahead, I don’t necessarily see smooth sailing. We didn’t have smooth sailing this year, so we must not expect next year to be any different. **We must continue to be optimistic, yet remain realistic in regard to our future priorities.** Health Sciences III research building continues to remain a top priority for us. We will not be able to grow our research enterprise if we have no place to put our researchers. Our second priority is advancing our development campaign. Our \$500 million campaign is ambitious indeed, but in light of these troubled economic times, fundraising takes on new urgency. In addition, we have to do everything we can to increase our financial margins and reserves because these are the major drivers in accomplishing all that we have accomplished already and hope to accomplish in future years. Furthermore, we need to leverage the federal stimulus funds for research and economic

growth, another imperative to the future success of our research enterprise.

We want to build upon and expand our centers of excellence, both research and clinical, and we will continue to work with our clinical partners in the University of Maryland Medical System to integrate our programs and collaborate across the system so we can make ourselves even more efficient, effective and more attractive to patients.

Finally, we will finalize and implement our strategic plan, the theme of which is “Soaring to Greater Heights Together.” This theme is embodied in a quote by Oliver Wendell Holmes (1809-1894), associate justice of the United States Supreme Court: “Greatness is not where we stand, but in what direction we’re moving. We must sail sometimes with the wind and sometimes against it, but sail we must, and not drift or lie at anchor.”

2010 PRIORITIES:

- » Health Sciences Facility III Research Building
- » \$500 Million Development Campaign
- » Increase Financial Margins & Reserves
- » Leverage Stimulus Funds for Research & Economic Growth
- » Build and/or Expand Centers of Research/Clinical Excellence
- » Work with Clinical Partner (UMMS) to Integrate/Collaborate Across the System
- » Finalize and Implement Five-Year Strategic Plan: “Soaring to Greater Heights, Together”



CONCLUSION »

We have been extremely grateful for all the successes the School of Medicine has enjoyed this past year. We envision many challenges ahead, and since the national economic downturn continues, we have to be realistic, yet relentless, about the future and the opportunities.

I believe that, as we have done in the past, we will employ the same resolve to deal with these anticipated challenges. Therefore, we will work with our partners to be stronger and to remain focused on our great sense of purpose. We will continue to position the school for continued growth. We will work to recruit and retain the best people and the best programs. We will use our past accomplishments to build a school that is ready for the future. **We are optimistic that our momentum will continue and we believe that, despite the very real challenges that exist, we will prevail.**

In the relentless pursuit of excellence, I am
Sincerely,

E. ALBERT REECE, MD, PHD, MBA

Vice President for Medical Affairs, University of Maryland
John Z. and Akiko K. Bowers Distinguished Professor and
Dean, University of Maryland School of Medicine