

UNIVERSITY *of* MARYLAND  
MEDICAL SYSTEM AND SCHOOL OF MEDICINE



ON ANY  
GIVEN  
DAY...  
2012  
ANNUAL REPORT

# ...2012

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ON ANY GIVEN DAY...**THE EXTRAORDINARY OCCURS.**

# A SHARED VISION

Together, the University of Maryland School of Medicine and the University of Maryland Medical System have forged a partnership based on our shared vision to be global leaders in health care, medical education and biomedical research, ensuring that on any given day, we provide the best care in the world to Maryland and the nation.

On any given day, the strength of our unique partnership is evident throughout Maryland and in more countries than we can count. We know of **no other partnership that is as integrated across an entire hospital system as the one we share** between the University of Maryland School of Medicine (SOM) and the University of Maryland Medical System (UMMS).

This makes for a potent force and a foundation for continued growth. It means more Marylanders — and more people worldwide — will have access to what we develop and discover.

**In fact, it is this integration that sets us apart when hospitals talk to us about partnerships.**

Our medical system is able to offer fiscal stability and the purchasing power of 12 member hospitals, and the medical school offers the intellectual capital of 2,800 faculty physicians and researchers who are committed to continuous refinement and quality of care. We continue to expand and hope to welcome more Maryland hospitals into the system during FY2013.

**The power of our partnership extends beyond Maryland:** With the inclusion of our partners at the Maryland Institute for Emergency Medical Services Systems, we attracted the attention of officials in the State of Rio de Janeiro, who came to the University of Maryland R Adams Cowley Shock Trauma Center for help in developing a better trauma system in anticipation of hosting the World Cup in 2014 and the Summer Olympic Games in 2016.



## A LETTER FROM CEO ROBERT CHRENCIK AND DEAN E. ALBERT REECE

### ALIGNMENT OF LEADERSHIP

Our strength comes from aligning what each of us does best. UMMS is a private, not-for-profit network of 12 academic, community and specialty hospitals throughout Maryland. The system's flagship hospital — the University of Maryland Medical Center (UMMC) — is a world-renowned academic medical center that offers the best in clinical care and serves as a ready resource and referral center for physicians and patients throughout the Mid-Atlantic region. Our hospitals across the state offer convenient access for patients to get the excellent care they need and deserve as close to home as possible. UMMS employs 21,541 people and has a combined total of 2,300 licensed beds. The hospitals recorded a total of 118,373 patient admissions in FY 2012 — more than any other health care provider in Maryland.

The School of Medicine, founded in 1807, is a preeminent biomedical research institution with more than 2,800 faculty members dedicated to training the next generation of physicians, scientists and allied health professionals.

According to the Association of American Medical Colleges (AAMC), the University of Maryland School of Medicine is one of the fastest-growing research enterprises in the country. In FY 2012, research grants and contracts totaled \$429 million. Among all 76 public medical schools nationwide, we rank sixth in research grant and contract expenditures. Among all 138 public and private medical schools nationwide, we rank 16th, according to the AAMC.

The University of Maryland founding campus in Baltimore provides our faculty with interdisciplinary collaboration with faculty in nursing, pharmacy, social work, dentistry and law.

### THE BEST IN PATIENT SAFETY AND QUALITY OF CARE

The dedication of faculty physicians and hospital staff led to unprecedented improvement in safety and quality of care at all of our hospitals during 2012. Leadership from the highest levels of the UMMS executive staff and board of directors provided a structure for sharing best practices.

Our academic hospital, the University of Maryland Medical Center, was one of just two hospitals nationwide to make the prestigious annual Leapfrog Group Top Hospitals list every year since its inception six years ago. Each year, Leapfrog recognizes hospitals for patient care outcomes, use of best practices and patient safety initiatives.

The Maryland Patient Safety Center chose Shore Health System as the winner of the 2012 Minogue Award for Patient Safety Innovation for its Target Zero initiative, which achieved its goal of zero health care-associated infections. Some patient care units in Shore Health have gone as long as three years without a case of health care-associated infections.

### NATIONAL RANKINGS RISE

In addition, the rankings for UMMC and the School of Medicine clinical faculty rose higher than ever this year in the *U.S. News & World Report* Best Hospitals issue. We were named as one of the top programs in the country in nine specialty categories: Cancer; Cardiology and Heart Surgery; Diabetes and Endocrinology; Ear, Nose and Throat; Gynecology; Nephrology; Neurology and Neurosurgery; Pulmonology; and Urology.

The School of Medicine's faculty physicians provide compassionate, world-class care at several system hospitals in addition to the Medical Center, and offer specialty services at more than 20 different locations throughout Maryland. Faculty physicians accommodate more than a million patient visits per year.

### CRITICAL RESEARCH ADVANCES

Transforming medicine through basic science and clinical and epidemiological research will always be at the heart of our joint mission. All of the physicians who practice or conduct research at UMMC are on the School of Medicine faculty.

Our partnership benefits patients by providing them with comprehensive, state-of-the-art care. A new Clinical and Translational Sciences Institute fosters the translation of fundamental science to patient care and community health, starting with a focus on diabetes, heart disease, cancer, schizophrenia, head injury and infectious and inflammatory diseases.

### ADDRESSING PHYSICIAN SHORTAGES AND BECOMING A VITAL COMMUNITY PRESENCE

Working together, we are dedicating energy and resources to identifying physician and health care professional shortages and working with the community and our hospital partners on solutions. Residents throughout Maryland now have more access than ever to world-renowned transplant specialists, neurosurgeons, cardiologists, pediatricians and other specialists and subspecialists. Our cancer services are expanding at Upper Chesapeake Health System, for example, and the faculty in Emergency Medicine added three locations in Prince

George's County to the network of emergency departments they manage throughout the state.

Maryland ExpressCare — the transport system for UMMC — recorded 10,339 physician referrals for urgent patient consultations and transfers from community hospitals, an increase of 87 percent since 2004.

### FINANCIAL PERFORMANCE AND ECONOMIC IMPACT

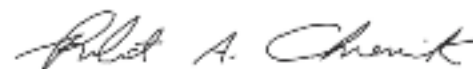
Despite the challenges of the financial environment of fiscal 2012, the Medical System and School of Medicine continued to demonstrate strong financial performance driven by quality and excellence in all mission areas. We did this by working together toward excellence, and by making good stewardship a part of our shared vision. In doing this, we contributed to the economic health of our communities. The Medical System generated \$2.8 billion in annual revenue and nearly \$4.4 billion in economic activity. With almost \$1 billion in additional revenue derived by the SOM, our combined organizations produced more than \$6 billion in economic activity for our region. The Medical System also maintains an "A" bond rating from Moody's Investors Service, Fitch Investors Service and Standard & Poor's.

### LEADERSHIP IN AN ERA OF CHANGE

The power of our partnership will help us lead and adapt to health care reform measures, including the Patient Protection and Affordable Care Act. Because of the alignment of our goals, we are prepared to be leaders in this effort, while ensuring clinical and research excellence, innovative practices and financial stewardship.

In the pages ahead, please read about the innovative patient care, exciting discoveries and educational leadership that have changed — and saved — lives this year.

*In the relentless pursuit of excellence, we are,*



Robert A. Chrenik, MBA, CPA  
President and Chief Executive Officer  
University of Maryland Medical System



E. Albert Reece, MD, PhD, MBA  
Vice President for Medical Affairs, University of Maryland  
& Dean, University of Maryland School of Medicine

MEDICAL SYSTEM

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*On any given day, the strength of the University of Maryland Medical System's partnership with the University of Maryland School of Medicine is evident throughout Maryland and around the world. This is a powerful and growing combination, one that makes it possible for more Marylanders, and more people worldwide, to have access to what we develop and discover.*

— Stephen A. Burch, Esq., Chair, UMMS Board of Directors





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*Through groundbreaking biomedical research, innovative medical education, and advanced clinical care, the School of Medicine has been transforming the lives of its students and patients for more than two centuries. Today, thanks to our partnership with the Medical System, we can combine the expertise of our research and clinical teams to provide life-changing treatments and cures that would have seemed unfathomable only a few years ago. Every hour of every day, our physicians and scientists demonstrate how the power of partnership can improve the lives of our patients in Maryland and beyond.*

— Michael Cryor, Chair, SOM Board of Visitors







ON ANY GIVEN DAY...**THE POWER OF PARTNERSHIP SAVES LIVES.**





## FULL FACE TRANSPLANT MAKES HISTORY

On Tuesday, March 20, 2012, University of Maryland surgeons and staff made history by completing the **most extensive full face transplant in the world**. The patient was 37-year-old Richard Norris of Virginia. It was the first time ever that a full face transplant was performed by a team of plastic and reconstructive surgeons with specialized training and expertise in craniofacial surgery and reconstructive microsurgery.



EDUARDO D. RODRIGUEZ, MD, DDS, (above, center) professor of surgery at the University of Maryland School of Medicine and chief of plastic, reconstructive and maxillofacial surgery in the R Adams Cowley Shock Trauma Center at University of Maryland Medical Center, led the face transplant surgical team that included, left to right, AMIR H. DORAFSHAR, MBChB, assistant professor of surgery; MICHAEL R. CHRISTY, MD, MA, assistant professor of surgery; BRANKO BOJOVIC, MD, assistant professor of surgery; and DANIEL BORSUK, MD, fellow in craniofacial plastic surgery.



THOMAS M. SCALEA, MD, FACS, FCCM, presided over the surgical teams.



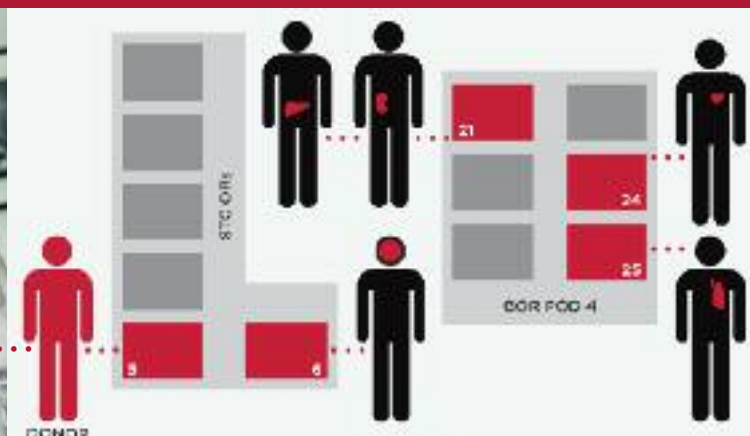
VANESSA PEREGRIN, MS, CCC-SLP, speech therapist

On any given day — or night — the 36 operating rooms of the University of Maryland Medical Center are ready for the **most complex of surgeries.**

# 72 HOURS AT UMMC

After a heroic decision by the family of one anonymous donor, **EDUARDO D. RODRIGUEZ, MD, DDS**, led the face transplant team in operating rooms 5 and 6, while teams worked in three other specially equipped operating rooms to perform heart, liver, kidney and lung transplants.

**DAY ONE** Face Transplant Begins (OR 5 & 6)  
Organ Donation Begins (OR 5)  
**DAY TWO** Face Transplant Finishes (OR 6)  
Heart Transplant (OR 24)  
Liver Transplant (OR 21)  
Single Lung Transplant (OR 25)  
**DAY THREE** Single Kidney Transplant (OR 21)



This medical milestone required the work of hundreds of faculty and staff, starting 10 years ago with basic science research at the University of Maryland School of Medicine on the body's immunologic response to transplantation of bone, nerves, muscle and blood vessels. In the meantime, surgeons and other patient care staff trained for years, and carefully considered which patient would be most appropriate for this first procedure.

The combined research and preparation by the scientists, surgeons, anesthesiologists, nurse practitioners, perioperative nurses, surgical technicians and other staff culminated in a 36-hour surgical procedure in the R Adams Cowley Shock Trauma Center at the University of Maryland Medical Center. Their goal was to restore form and function to a man whose injuries had forced him to live as a recluse since 1997.

**Thomas M. Scalea, MD, FACS, FCCM**, physician-in-chief of the Shock Trauma Center, presided over the surgical team and support staff in the operating rooms of the trauma center. Dr. Scalea is the Francis X. Kelly Professor of Trauma Surgery and director of the Program in Trauma at the School of Medicine, and the system chief for critical care services for the University of Maryland Medical System.

Mr. Norris' injury had made his speech difficult to understand, but the transplant gave him a full tongue, full set of teeth and two lips for the first time since 1997. Three days after the transplant, he began working with the speech therapists at the Shock Trauma Center on swallowing and communication. Therapists guided him through exercises and stretches and used massage to stimulate blood flow to the facial muscles and nerves.

The vascularized bone marrow in the transplanted jaws, combined with the expertise of the plastic surgery and transplant teams who are caring for him, give Mr. Norris the best possible chance at long-term success.



**STEPHEN T. BARTLETT, MD**, the Peter Angelos Distinguished Professor and Chair of the Department of Surgery at the School of Medicine, secured a grant in 2002 from the Office of Naval Research in the Department of Defense to study composite tissue allotransplantation.

Dr. Bartlett is also chief of surgery at UMMC and surgeon-in-chief and senior vice president for system program integration for the University of Maryland Medical System.



**ROLF N. BARTH, MD**, associate professor of surgery at the School of Medicine and a transplant surgeon who specializes in kidney, pancreas and liver transplantation. Dr. Barth co-led research showing that vascularized bone marrow, such as that taken from the marrow-rich jaw bones, required lower levels of immunosuppression.



### THOUGHT LEADERSHIP IN EMERGENCY MEDICINE

It's almost impossible to predict the illnesses and injuries that will come through the door on any given day in the emergency department (ED) of a busy hospital. It is possible, however, to be ready for any of them. Over the past decade, **Brian Browne, MD, FACEP**, has earned an international reputation for being able to diagnose what's keeping an ED from peak functionality, and administer the cure.



**BRIAN BROWNE, MD, FACEP**, professor and chair of the Department of Emergency Medicine at the University of Maryland School of Medicine and chief of emergency medicine at the University of Maryland Medical Center.

On any given day, University of Maryland Emergency Medicine Network physicians see on average 1,370 patients at **academic and community hospitals** in the state.

# 1,370 EMERGENCIES A DAY



University of Maryland ExpressCare transports more than **10,000 critically ill patients each year** from other UMMS and non-UMMS hospitals to UMMC for advanced emergency care.



**LAURA PIMENTEL, MD**, clinical associate professor in the Department of Emergency Medicine, is vice president and chief medical officer of the University of Maryland Emergency Medicine Network.

Dr. Browne and his team, through the University of Maryland Emergency Medicine Network (UMEMN), now provide emergency care for 500,000 patients each year — a fifth of all emergency patients in the state — and consult with hospitals in other states and several nations.

Dr. Browne's record of success began in the ED at the University of Maryland Medical Center, where more than 65,000 people seek emergency care every year. Other hospitals in Maryland took notice and invited Browne and his team to help the EDs at Mercy Medical Center and Bon Secours Hospital, both in Baltimore, and the Baltimore VA Medical Center. Those hospitals remain independent, but University of Maryland Emergency Medicine faculty physicians manage the EDs.

Community hospitals that are part of Shore Health and Upper Chesapeake Health also asked him to help their EDs, even before those groups decided to join UMMS. In 2012, UMEMN and the University of Maryland Medical System (UMMS) signed an agreement to manage the EDs in three locations in Prince George's County for Dimensions Healthcare System.

Dr. Browne approaches each makeover with engineer-like precision. First, he tracks what kind of patient shows up for care at what time; how many doctors, nurses and other staff are on duty each hour of the day; which equipment and resources are available; and how hard — or easy — it is to move a patient to another facility for advanced care. Armed with the data, he can anticipate the kinds of problems that might arise

and, more importantly, the number of physicians and staff who will be needed at different times of the day, any day of the week. There's no secret formula or one-size-fits-all solution.

In UMMS hospitals where he has a team, the net result is a horizontal emergency organization, sharing resources and efficiently moving patients when they need a higher level of care.

Faculty in the Department of Emergency Medicine have obtained grants from the National Institutes of Health for more than seven years for their projects overseas. As part of its growth, the department is increasing collaboration with international colleagues, particularly those in developing countries. Current projects are under way in China, Liberia, Egypt, Tanzania and the Netherlands.

Despite the complex organization required to run an emergency medicine enterprise, it's still all about the people seeking help.

"I happen to like working in the emergency department," Browne says, "because we can make an immediate impact for patients."



## THE FOREFRONT IN PERSONALIZED MEDICINE AND GENOME SCIENCE

At the University of Maryland School of Medicine, a physician-scientist leader in the field of personalized medicine — **Alan R. Shuldiner, MD** — and a groundbreaking genome scientist — **Claire M. Fraser, PhD** — have combined their vast expertise and talents to form **the new Program in Personalized and Genomic Medicine (PPGM)**. The ultimate goal of PPGM is the discovery and translation of genetic and genomic information into better health care for patients.

Researchers have made great strides in recent years toward a more individualized approach to medicine. To accomplish this, a vast amount of genetic and genomic information must be obtained, analyzed and translated into precise diagnostic tests and targeted therapies for personalized medicine.

Dr. Shuldiner, associate dean and director of the Program in Personalized and Genomic Medicine and the John L. Whitehurst Endowed Professor of Medicine, has pioneered the use of molecular biology and genetics to develop better treatments for chronic diseases, such as Type 2 diabetes, obesity and cardiovascular disease. For example, his group was among the first to identify a common gene variation now guiding more effective anti-platelet therapy in patients with coronary artery disease, which, along with stroke, accounts for 40 percent of deaths in the U.S. each year.

Dr. Fraser, professor of medicine and microbiology and immunology and director of the Institute for Genome Sciences (IGS), published the first complete genome sequence of a free-living organism in 1995. Under her direction, IGS investigators are pioneering the use of genetic and genomic information to develop better diagnostic techniques for a wide variety of human illnesses. For example, Scott E. Devine, PhD, associate professor of medicine and a research scientist at IGS, is studying whether the presence of segments of self-replicating DNA, called transposons, in a person's genome can predict whether they will develop certain diseases, such as cancer.

IGS is an interdisciplinary center that provides the medical school as well as the University of Maryland Medical Center with gene and genomic sequencing and analysis support.

A key component of personalizing genomic information is bioinformatics — the analysis of DNA sequence information using



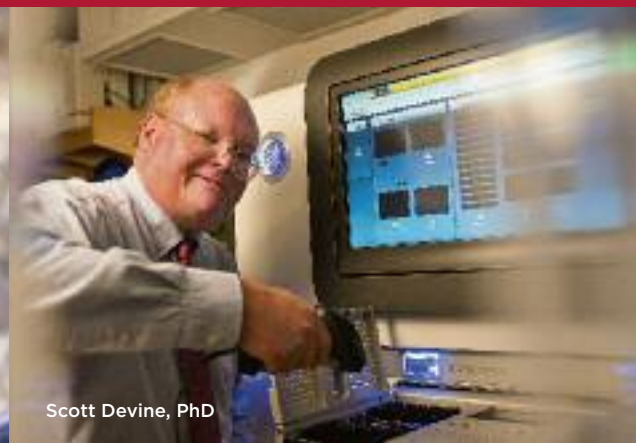
Alan Shuldiner, MD

computers and statistical techniques to identify patterns that may be associated with illness or health.

With the cost of sequencing DNA dropping dramatically, it soon will be possible to sequence a patient's entire genome for about the same cost as an MRI scan. Using clinical DNA sequencing, PPGM is beginning to implement personalized medical approaches at the University of Maryland Medical Center to diagnose genetic diseases as well as to treat and prevent heart attacks, cancer and diabetes — making PPGM an international leader in the discovery and translation of genetic information into more personalized therapies that are more effective and less costly.

On any given day, scientists at the Institute for Genome Sciences can generate more than **100 billion bases of DNA** sequence to look for patterns that may be associated with health and disease.

# GENOMIC MEDICINE



Scott Devine, PhD



Claire Fraser, PhD



JACQUES RAVEL, PhD, professor of microbiology and immunology and associate director of genomics at IGS, is helping SOM researchers better understand the role of microbes that naturally inhabit the human body and how to personalize preventive and curative treatments based on the microbes' genomic profiles.



OWEN R. WHITE, PhD, professor of epidemiology and public health and associate director for bioinformatics at IGS, has been working to help put the appropriate bioinformatics infrastructure in place to make PPGM successful.



STEPHEN DAVIS, MBBS, co-leads the SOM's new Clinical and Translational Sciences Institute (CTSI) along with Dr. Shuldiner.

Dr. Davis is the Dr. Theodore E. Woodward Chair in the Department of Medicine and professor of medicine. The CTSI will foster the translation of basic science to patient care and community health, focusing on six areas — diabetes, heart disease, cancer, schizophrenia, head injury and infectious and inflammatory diseases.



## A SHOCK TRAUMA MODEL FOR THE WORLD

Brazil will step into the spotlight to host the 2014 FIFA World Cup and the 2016 Summer Olympics. Until then, health officials in that country are strengthening their trauma system for the elite athletes and hundreds of thousands of fans and supporters — as well as the 18 million people who live in the State of Rio de Janeiro. **They researched the best trauma networks worldwide, and decided to replicate the University of Maryland's model.**



The physician and nurse leaders from the State of Rio de Janeiro trained for six weeks under CARNELL COOPER, MD, FACS, clinical associate professor of surgery, and other trauma staff, and at the Maryland Advanced Simulation, Training, Research and Innovation Center.



Deana Holler



Karen McQuillan

Shock Trauma nurse leaders KAREN McQUILLAN, MS, RN, CNS-BC, CCRN, CNRN, and DEANA HOLLER, MS, RN, trained visiting health care leaders from Rio in building a network of hospitals and emergency responders.



On any given day, an average of 23 of the most critically ill or injured patients in the region are brought to the University of Maryland R Adams Cowley Shock Trauma Center from the scene of injury or from other hospitals. **Approximately 97 percent survive.**

# GOLD STANDARD OF CARE



In March 2011, SERGIO CABRAL FILHO, (left) governor of the State of Rio de Janeiro, signed a sister-state agreement with Maryland Gov. MARTIN O'MALLEY (right) and a health care collaboration agreement with ROBERT CHRENCIK, MBA, CPA, (center) president and chief executive officer of the University of Maryland Medical System.

Maryland's trauma network has it all — excellent coordination of care from the site of injury through rehabilitation, backed by the expertise and research power of the University of Maryland School of Medicine.

In January and February 2012, 17 physician and nurse leaders selected by the secretary of health for the State of Rio de Janeiro came to the R Adams Cowley Shock Trauma Center for an intensive six-week training program that was, in a word, golden: R Adams Cowley, MD, the center's namesake, was a pioneering surgeon who developed the concept of the Golden Hour. Cowley found that stabilizing patients in the first hour after a traumatic injury gave them a much better chance of survival, so the model he pioneered includes pre-hospital response, coordinated statewide by the Maryland Institute for Emergency Medical Services Systems.

The Rio physicians and nurses have now returned to their own country to open four new trauma hospitals and a rehabilitation hospital. In emulating the Maryland model, they will foster an interdisciplinary team approach to ensure the best outcomes for their patients, whether they are elite athletes from around the world or neighborhood teens riding their bikes.

The Rio State Health Foundation has also developed a strong relationship with the University of Maryland Medical Center (UMMC) to collaborate in other disciplines. The Health Foundation is opening a new transplant hospital for the State of Rio at the end of 2014, and is considering collaboration with UMMC in the training of nurses and physicians in transplant surgery and patient care.



THOMAS M. SCALEA, MD, FACS, FCCM, is the Francis X. Kelly Professor of Trauma Surgery and director of the Program in Trauma at the School of Medicine. He is also the system chief for critical care services for UMMS and physician-in-chief of the University of Maryland R Adams Cowley Shock Trauma Center.



## INSPIRING THE NEXT GENERATION OF PHYSICIANS

**After a career spanning four decades, Frank M. Calia, MD, MACP, retired this year as a consummate physician educator.** His specialty was internal medicine — infectious disease, in particular. In addition to treating patients, he helped prepare thousands of medical doctors who now practice all over the world. He didn't do it alone — the 2,800 faculty members at the University of Maryland School of Medicine send off graduates with a wealth of knowledge, experience and perspective.

Dr. Calia loved challenging his students to think for themselves and motivating them to become the best physicians they could be. During Friday afternoon Socratic sessions, he would pepper junior medical students with questions about a perplexing medical case, and then cajole them into putting together the pieces of the puzzle to come up with a proper diagnosis.

**“I wanted them to be comfortable with being wrong. As doctors, they don't have to be right all the time. By acknowledging they were wrong, they would be able to look it up and learn from the experience,”** says Dr. Calia, who retired as professor emeritus and vice dean of clinical affairs in January 2012.

His students, in turn, honored his commitment to education — and to them — by presenting him with **nearly 30 awards** during his career, including the Golden Apple and Teacher of the Year awards.

The medical school has created an **endowed professorship** in honor of Dr. Calia's many contributions to medicine and education. Key gifts from faculty and alumni have provided seed money for the professorship.

**“Dr. Calia's impact is so immense, it is quite difficult to measure. There are no venues on our campus that can hold all the people, directly and indirectly, whose lives Frank has touched,”** says E. Albert Reece, MD, PhD, MBA, vice president for medical affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean of the School of Medicine.

As a chair or acting chair of four departments and as a vice dean of clinical affairs, Dr. Calia played a key role in many clinical initiatives and programs throughout the School of Medicine and the Medical Center.

**“I love medicine, especially internal medicine. I can't imagine ever doing anything else,”** he says.

Through the efforts of educators like Dr. Calia, the School of Medicine received a **five-year, \$877,000 grant** from the federal Health Resources and Services Administration to develop a program to increase the number of **medical students who choose a primary care specialty**, which will be essential to health care reform.

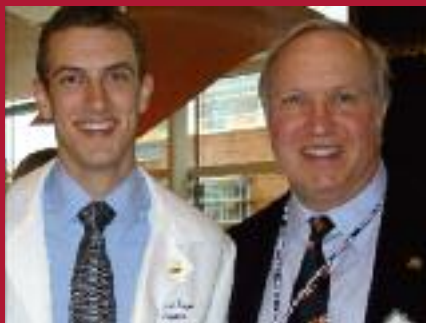
The School of Medicine also works very closely with the University of Maryland Medical Center and other hospitals in the University of Maryland Medical System on residency programs for newly minted doctors in primary care and other specialties.

**“There is no corner of this institution without Dr. Calia's imprint,”** says Dr. Reece.

On any given day, some 1,800 medical students, resident physicians and fellows are training at the University of Maryland School of Medicine and the University of Maryland Medical Center.

# THE PHYSICIAN EDUCATOR

## In the Knipp Family, Five Generations of University of Maryland School of Medicine Physician Alumni



University of Maryland School of Medicine student DAVID E. KNIPP (left), is the fifth generation in his family to attend the school. He will graduate in 2014. His father, radiologist HARRY C. KNIPP, MD, FACR (right), Class of 1976, was one of

Dr. Calia's students and later worked with his former professor both as a member of the school's Board of Visitors and as a member of the Maryland Board of Physicians.



**Class of 1951**

David Knipp's grandfather, HARRY L. KNIPP, MD, FAAP, AGSF, Class of 1951, was a family doctor who served as a past president of the Maryland Academy of Family Physicians.



**Class of 1923**

His great-grandfather, GEORGE A. KNIPP, MD, Class of 1923, was a general practitioner.



**Class of 1887**

General practitioner HARRY E. KNIPP, MD, Class of 1887, was David's great-great-grandfather.

Frank Calia, MD, MACP



All five generations of Knipps have attended lectures in Davidge Hall, the oldest building in the Western Hemisphere continuously used for medical education.

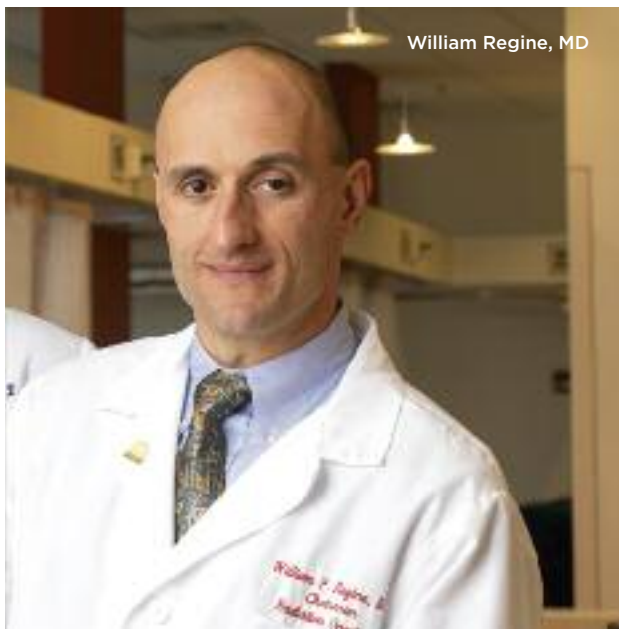


Dr. Calia at his retirement celebration with his wife, Elizabeth Calia, and Dr. Reece.

# UNIVERSITY OF MARYLAND BIOPARK

## MARYLAND/WASHINGTON'S FIRST PROTON THERAPY CENTER BREAKS GROUND

Proton beam therapy is the next generation of radiation oncology, offered by fewer than a dozen centers around the country. It allows **unprecedented precision in its ability to deliver a dose of lifesaving radiation therapy** directly to the tumor while minimizing radiation to the healthy tissue surrounding it, providing a more effective treatment with fewer side effects.



William Regine, MD



Mohan Suntha, MD

The University of Maryland School of Medicine and its development partner, Advanced Particle Therapy LLC of San Diego, Calif., broke ground in April on the Maryland Proton Treatment Center, a more than \$200 million project.

The center will open to patients in 2015. It will be the first proton treatment center in the Baltimore-Washington region. The School of Medicine's radiation oncology practice, University of Maryland Radiation Oncology Associates PA, will provide clinical management, physician services and medical direction. The physicians expect to treat as many as 2,000 cancer patients a year with this most precise technology.

The facility will be housed in a 110,000-square-foot building in the University of Maryland BioPark on the University of Maryland's founding campus in Baltimore.

The project has been spearheaded by William F. Regine, MD, professor and Isadore & Fannie Schneider Foxman Chairman of the Department of Radiation Oncology and head of the radiation oncology practice, and Mohan Suntha, MD, the Marlene and Stewart Greenebaum Professor of Radiation Oncology, vice president for system program development for the University of Maryland Medical System, and associate director of clinical affairs for the University of Maryland Marlene and Stewart Greenebaum Cancer Center.

"As leaders in radiation oncology clinical and basic science research, we at the University of Maryland Marlene and Stewart Greenebaum Cancer Center expect to be a part of the national team of experts who will determine the future of this evolving therapy," Dr. Regine says. "This center affirms our position in that leadership role."

On any given day, more than 200 patients receive radiation therapy from centers associated with the University of Maryland Marlene and Stewart Greenebaum Cancer Center. Proton therapy will provide a more effective option for certain types of cancer.

# PROTON BEAM THERAPY



At the April 2012 groundbreaking for the new Maryland Proton Treatment Center, UMMS and SOM officials were joined by representatives of Advanced Particle Therapy, Maryland Governor MARTIN O'MALLEY, Baltimore Mayor STEPHANIE RAWLINGS-BLAKE and University of Maryland, Baltimore, President JAY A. PERMAN, MD.

Artist's rendering of the Maryland Proton Treatment Center, which opens in 2015.



Renowned physician-scientist MINESH P. MEHTA, MBChB, FASTRO, will run the first proton treatment center in the Baltimore-Washington region.

Dr. Mehta will also serve as associate director of clinical research in the Department of Radiation Oncology.



## ACHIEVING THE HIGHEST LEVELS OF QUALITY AND SAFETY IN PATIENT CARE

Patient safety and high-quality care should be a given. But the fact is that hospitals don't achieve excellence by accident or default. **Patient safety requires purposeful attention, allocated resources and the sharing of best practices.** Research is always uncovering ways to improve patient outcomes and reduce complications. At the University of Maryland Medical System (UMMS), leaders from all 12 hospitals maximize their collective expertise to achieve better results than ever before.

Hospitals nationwide now emphasize one common set of measurement specifications called “Core Measures” — a set of 30 indicators based on actual patient outcomes — to monitor the quality of care. Core Measures include care for patients presenting to the hospital with heart attack, pneumonia, congestive heart failure, surgery and children's asthma. Hospitals also report the incidence of central line-associated bloodstream infections (CLABSI) and many other metrics of quality and safety.

In the most recent data available for FY 2012, eight of the 10 system hospitals that participate in Core Measures earned composite scores that placed them in at least the **top 25 percent of Maryland hospitals**. Only five hospitals were in Maryland's top 10 percent for compliance. Four of those are UMMS hospitals: Upper Chesapeake Health, Baltimore Washington Medical Center, Maryland General Hospital and Kernan Orthopaedics and Rehabilitation, with Civista Medical Center ranking sixth.

UMMS hospital leaders meet regularly to share best practices. Baltimore Washington Medical Center developed a safety checklist for perioperative staff. Staff at Upper Chesapeake took the checklist and added some refinements — and shared it back. Now, every one of the UMMS hospitals is using the checklist.

University of Maryland School of Medicine faculty, particularly **Anthony D. Harris, MD, MPH**, professor of epidemiology and public health and medicine, are engaged in the systemwide quality effort with member hospitals. Dr. Harris presented hospital leaders with data showing that surgical patients have a lower risk of infection if they shower at home — both the night before surgery and the morning of surgery — using a liquid cleanser containing chlorhexidine gluconate. University of Maryland Medical Center and Upper Chesapeake Health were the first to adopt this practice, and now it's being implemented across the system.



Anthony Harris, MD, MPH

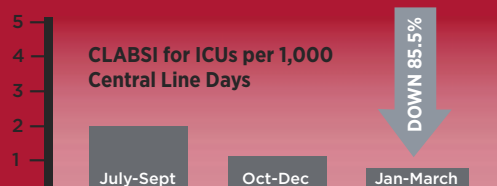


On any given day, dozens of severely injured or critically ill patients with the highest risk of infection are brought to **intensive care units** throughout the University of Maryland Medical System.

# SHARING BEST PRACTICES



**University of Maryland Medical System**  
**Central Line-Associated Bloodstream Infections (CLABSI)**  
**Dramatically Decreased**



By working together as a system, UMMS hospitals have reduced central line-associated bloodstream infections across ICUs by 85 percent over the past two years.

The Maryland Patient Safety Center chose Shore Health as the winner of the 2012 Minogue Award for Patient Safety Innovation for its **Target Zero** initiative, which is reducing health care-associated infections and saving lives. The staff declared that it's not right to accept even one preventable infection. They kicked off a multidisciplinary effort across the whole organization to achieve zero health care-associated infections in all patient units, on a continual basis.

As a major referral center with 10 intensive care units (ICUs), the University of Maryland Medical Center has a high proportion of patients who are the most vulnerable to central-line infection. Through the collaborative efforts of physicians and nursing staff, the hospital recorded 89 fewer central-line infections in FY 2012.

**Based on conservative estimates, 89 fewer infections translates to:**

- 89 individuals spared the increased hospitalization and risk.
- 11 lives saved, based on the mortality rate of such infections.
- \$2 million avoided in costs to treat central-line infection.

UMMC is one of just two hospitals nationwide to make the annual list of Leapfrog Group Top Hospitals for quality of care and patient safety every year since its inception six years ago.

Collaboration has made it possible for UMMS hospitals to reach greater heights than they could alone. Their collaboration is led by **Glenn F. Robbins, MD**, senior vice president and chief medical officer for UMMS, and public health expert **Georges S. Benjamin, MD, FACP, FNAPA, FACEP(E), Hon FRSPH**, a member of the UMMS Board of Directors and a past secretary of the Maryland Department of Health and Mental Hygiene. **Henry J. Franey, MBA**, executive vice president and chief financial officer, understands that safety and excellence provide the best return on investment. **Jon P. Burns**, chief information officer, engineers the information technology that enhances patient safety.



**GEORGES S. BENJAMIN, MD, FACP, FNAPA, FACEP(E), HON FRSPH**, chairs the UMMS Board of Directors' Committee on Patient Quality and Safety, whose other members are:

- Robert A. Chrencik, MBA, CPA
- E. Albert Reece, MD, PhD, MBA
- Lisa Rowen, DNSc, RN, FAAN
- Wayne L. Gardner, Sr.
- Senator Catherine E. Pugh
- Walter Tilley, Jr.



**GLENN F. ROBBINS, MD**, works with all 12 system hospitals to share best practices and ensure patient safety.



## THE MOST ADVANCED CARE FOR THE SMALLEST PATIENTS

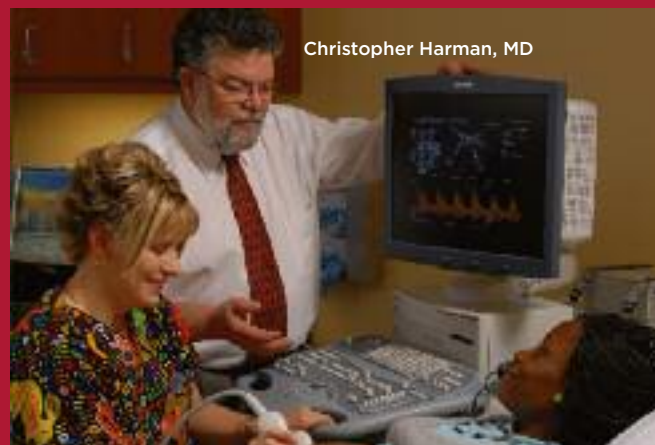
**Daniel DeVillier** was born at UMMC on January 21, 2011, and spent six weeks in the Neonatal Intensive Care Unit before going home with his parents. He and his parents received seamless care from a team that included **Christopher Harman, MD**, professor and interim chair of the Department of Obstetrics, Gynecology and Reproductive Sciences; the Center for Advanced Fetal Care; and the Department of Pediatrics.



Daniel DeVillier's middle name is **Christopher**, in honor of Dr. Harman.

On any given day, 40 newborn infants in UMMC's Neonatal Intensive Care Unit are getting the best chance of survival from physicians, nurses, respiratory therapists, clinical pharmacists and others who specialize in the care of the smallest of patients.

# MINI MARYLANDER

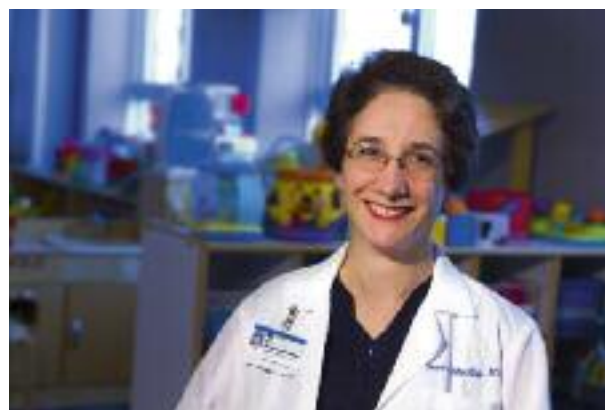


Under the care of **Christopher Harman, MD**, professor and interim chair of the Department of Obstetrics, Gynecology and Reproductive Sciences, and his team, the Center for Advanced Fetal Care and the Department of Pediatrics provided seamless care for baby Daniel, who spent six weeks in the Neonatal Intensive Care Unit after he was born at the University of Maryland Medical Center (UMMC) on January 21, 2011.

**"I have a child because of the University of Maryland," Mrs. DeVillier says of her smiling toddler, who is fascinated by blue crabs, boats and the horses on the family's farm.**

The DeVilliers say they drive 90 minutes each way, passing several other hospitals, for the medical expertise and compassionate, family-centered care Daniel receives. His care team includes **Susan Mendley, MD**, associate professor of pediatrics and medicine and director of the Division of Pediatric Nephrology; **Laide A. Jinadu, MD**, assistant professor of pediatrics in the Division of Pediatric Nephrology; **Roger Voigt, MBChB, FRACS**, assistant professor of surgery, head of pediatric surgery and surgeon-in-chief at the University of Maryland Children's Hospital; and other specialists and staff at UMMC.

**"We literally can't walk through the hallways without someone stopping us for a hug,"** says Mrs. DeVillier, who also joined an online community of University of Maryland "kidney moms" who share their stories and appreciation for the great care their children have received. **"We know Daniel will need a kidney transplant at some point, but we take comfort knowing that he's in the best hands possible."**



Daniel's care is now coordinated by **SUSAN MENDLEY, MD**, and the team at the outpatient clinic at the University of Maryland Children's Hospital.



**ROGER VOIGT, MBChB, FRACS**, has performed three surgeries on Daniel since his birth. Mrs. DeVillier and her fellow "kidney moms" say they are Dr. Voigt's biggest fans.



**LAIDE JINADU, MD**, is one of the pediatric nephrologists caring for Daniel.



## TECHNOLOGY TAKES STROKE EXPERT TO THE SCENE

Technology is making it possible for the University of Maryland Medical System to put the most experienced stroke specialists in more than one place at a time. **The Brain Attack Team at the University of Maryland Medical Center (UMMC)** already serves as a resource to all hospitals in the system and in the region. **“Telestroke” technology** makes it possible for the consulting expert to conduct a real-time patient assessment and consultation from across the state.



The telestroke program will debut at Upper Chesapeake Medical Center. Telestroke will allow Brain Attack Team specialists to use sophisticated video and monitoring equipment to see patients and communicate with the care team at Upper Chesapeake in real time, deciding whether these patients should receive time-sensitive clot-busting treatment, and whether the patient will need to be moved to another hospital for more advanced intervention or monitoring. The program will expand to other hospitals in the system and to other facilities across the state. UMMC, designated by The Joint Commission as a Primary Stroke Center, will serve as the center of the “hub-and-spokes” model.

When patients progress to rehabilitation after a stroke, they have access to world-renowned experts. **Richard Macko, MD**, professor of neurology, leads a team of School of Medicine and VA Maryland Health Care System investigators studying the benefits of exercise for stroke patients. Several hospitals in Maryland and around the world are following Dr. Macko’s protocols, including a project launched in 2011 in Jamaica.

**Steven Kittner, MD**, professor of neurology, leads an international consortium of researchers, including **John Cole, MD**, associate professor of neurology, who are identifying genetic risk factors for stroke.

**Barney Stern, MD**, professor of neurology; **Carolyn Cronin, MD, PhD**, assistant professor of neurology; and **Marcella Wozniak, MD**, associate professor of neurology; are conducting stroke research as part of an elite group of institutions in the National Institutes of Health Neurological Emergency Treatment Trials Network.



Marcella Wozniak, MD

On any given day, an estimated 1,900 people in the United States **suffer a stroke**, making it one of the most serious of all health problems.

# TELE STROKE

## Research at School of Medicine Leads to Drug Discovery

Looking for new ways to limit brain swelling after a stroke, **BARNEY STERN, MD**, (far right) professor of neurology, and **KEVIN SHETH, MD**, (far left) assistant professor of neurology, lead the GAMES trial, investigating the potential for an IV form of the diabetes drug glyburide.

The drug was developed through the research of **J. MARC SIMARD, MD**, (center, left) professor of neurosurgery, to improve the outcomes for patients with severe strokes. **KAREN YARBROUGH, MS, ACNP**, (center, right) acute care nurse practitioner, directs the programs within the Maryland Stroke and Brain Attack Center.



The Medical System's comprehensive stroke care continues at the nationally recognized Kernan Orthopaedics and Rehabilitation.

Danniella Muheim (far left), had suffered a stroke at work and was taken first to a Washington-area hospital before being referred to the experts at UMMC's Neuro ICU.

She continued her rehabilitation at Kernan as an inpatient, and now returns there for outpatient therapy for balance and other functions. **STEPHANIE BUGG, COTA**, is her occupational therapist, and **GLEN KEHS, MD**, assistant professor of neurology and medical director of the Stroke Rehabilitation Unit at Kernan, is her doctor.



## PARTNERSHIP LEADS TO A GROWING ARRAY OF SERVICES

The University of Maryland School of Medicine is integrated with all 12 hospitals in the University of Maryland Medical System (UMMS). **No other partnership in the country has a more integrated model.** The University of Maryland Medical Center serves as a referral center for all hospitals in the system, with highly specialized care. The community and specialty hospitals within UMMS are continually expanding their programs to serve the people of Maryland and beyond.

At Chester River Health, a new program called Taking Charge of Your Heart provides people with congestive heart failure with home care follow-up visits and check-in calls from a nurse, with the aim of reducing the need for emergency department visits.

Shore Health provides specialty clinics staffed by the University of Maryland School of Medicine. These clinics make it possible for residents of the Eastern Shore to have more convenient access to world-renowned specialists in kidney transplant, liver disease, pediatric surgery and vascular surgery.



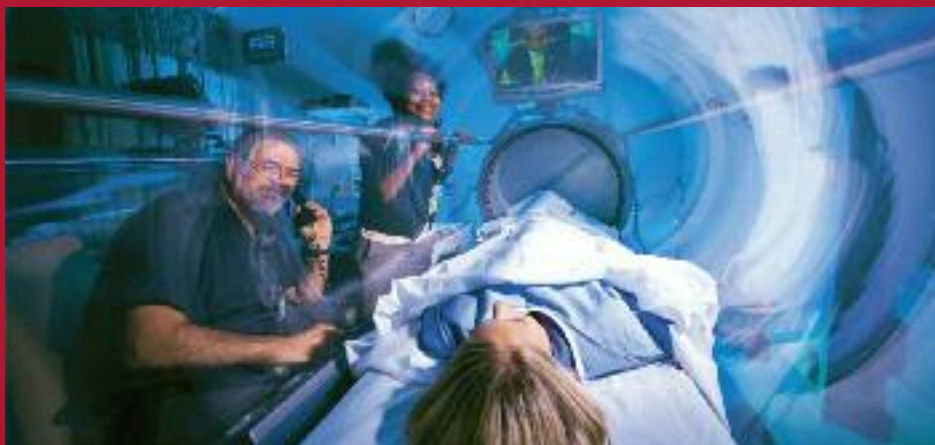
Baltimore Washington Medical Center added a new radiation oncology treatment machine at the Tate Cancer Center, where doctors who care for patients include WENDLA CITRON, MD, assistant professor; MITCH OH, MD, clinical assistant professor; and RANDI COHEN, MD, MS, assistant professor, all of whom are faculty in the Department of Radiation Oncology at the University of Maryland School of Medicine.



Kernan Orthopaedics and Rehabilitation is leading a study comparing two exercise modalities, the Lokomat robot-assisted treadmill and aquatic therapy, in patients with spinal cord injury. With funding from the U.S. Department of Defense, the study compares effects on fitness, function, and metabolic parameters between the two methods. People with spinal cord injury are at higher risk for cardiovascular disease and diabetes. Establishing an optimal exercise program could change clinical practice.

On any given day, the hospitals of the University of Maryland Medical System are meeting the needs of Maryland and the Mid-Atlantic region, and **bringing more specialty services** to those who live in **suburban and rural communities**.

# INTEGRATED EXCELLENCE



## Two New Wound Healing Centers

Maryland General Hospital opened a new center to provide state-of-the-art care for patients with chronic, non-healing wounds. The Maryland Wound Healing Center provides specialized, hospital-based outpatient care for people with wounds that fail to heal after more than 30 days with standard treatment. The center offers a comprehensive, one-stop approach to wound treatment.

Civista Medical Center's new Center for Wound Healing opened in the summer of 2012, offering highly specialized care for chronic wounds, including negative-pressure wound therapy, bioengineered tissue, biosynthetic dressings, growth-factor therapies and hyperbaric oxygen therapy.



Gastroenterologist **LANCE URADOMO, MD, MPH**, assistant professor of medicine at the School of Medicine and director of endoscopy at the VA Maryland Health Care System, joined BWMC. He offers specialized procedures such as therapeutic endoscopy and evaluation of pancreatic cysts and subepithelial masses in the gastrointestinal tract.

Shore Health System opened Shore Medical Pavilion in December 2011, further expanding medical services for Queen Anne's County residents. Maryland Primary Care Physicians and specialists in urology, neurology, gynecology, otolaryngology and cardiology are based at the pavilion.

The oncology program at Upper Chesapeake Medical Center added multidisciplinary clinics for both lung and breast cancer in anticipation of the opening of its comprehensive cancer center in Bel Air in late 2013.

Mt. Washington Pediatric Hospital offers state-of-the-art therapy and treatments to help children and adolescents heal and grow.



**CHRISTY GARNER, DPT**, a physical therapist, works with **Demi Friedel, 5**, in the Balance Clinic, using the **NeuroCom® Balance Master System**.



With guidance from **ATYIA BROWN, PTA**, physical therapist assistant, **Cierra Foxx** uses the **Bioness®** device to build lower leg strength.



YEMI ADEBAYO, medical student

UNIVERSITY OF MARYLAND  
SCHOOL OF MEDICINE



**CHANGING**  
**LIVES**  
**WORLDWIDE**



Jamaica • Ethiopia • Kenya • Malawi • Nigeria • Rwanda • Uganda • Zambia • Mali • Chile • Haiti • Germany  
Sweden • Brazil • Afghanistan • Iraq • China • Liberia • Tanzania • Netherlands • Ireland • Turkey



Every day, the University of Maryland School of Medicine collaborates with other institutions around the world, **relentlessly seeking ways to improve the health and well-being of an increasingly global population within a rapidly changing and challenging environment.**

The very essence of our mission is to change lives worldwide — **through discovery** and the introduction of new scientific knowledge that enhances the ability to diagnose, treat and ultimately cure diseases.

## UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE HIGHLIGHTS

This past year, the School of Medicine continued to transcend the frontier of discovery in basic science, clinical research and patient care. Despite financial challenges, our scientists paved the way for innovative treatments and cures and fostered the translation of fundamental science to patient care. In addition, our physician scientists received prestigious national and international awards for their work in academic medicine, while improving the health of the citizens of Maryland and the world.

### RESEARCH

#### HEALTH SCIENCES FACILITY III UPDATE

The much-needed SOM Health Sciences Facility III (HSF III) Research Building is closer to becoming a reality, thanks to \$4.7 million in new matching funds for design work approved by the Maryland General Assembly. The legislature approved \$4 million in matching funds last year.

The 332,000-square-foot, \$284 million facility will be located on the site currently occupied by Hayden-Harris Hall (the former University of Maryland Dental School building). The new facility will address current and future space needs for research.

#### INJURIES TO HEADPHONE-WEARING PEDESTRIANS

A School of Medicine researcher has shown that serious injuries to pedestrians listening to headphones have more than tripled in the last six years. In many cases, the cars or trains are sounding horns that the pedestrians cannot hear, leading to fatalities



in nearly three-quarters of cases. Lead author **Richard Lichenstein, MD**, associate professor of pediatrics, found

that young men are particularly vulnerable to distraction by mobile devices with head-phones. He studied accident reports and online databases focusing on pedestrian injuries or fatalities from crashes involving trains or motor vehicles. The research was published online in the journal *Injury Prevention*.

#### REDUCING THE NEED FOR MASTECTOMY

A breast cancer treatment pioneered by a School of Medicine researcher can reduce the need for a mastectomy in some women. The study, led by **John A. Olson Jr., MD, PhD**, the Campbell and Jeanette Plugge Professor and vice chair of the Department of Surgery, found that half of the postmenopausal women in the study who initially faced having a mastectomy were able to have breast-conserving surgery after being treated with an aromatase inhibitor.

The use of aromatase inhibitors, which stop the production of estrogen that fuels the growth of cancer cells, was pioneered by **Angela H. Brodie, PhD**, professor of pharmacology. For her work, Dr. Brodie was awarded the 2012 Pharmacia-ASPET Award for Experimental Therapeutics.



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#### BETTER TREATMENT FOR HIP SURGERY PATIENTS

New research co-authored by School of Medicine scientists and published in *The New England Journal of Medicine* could change the way older patients are treated for anemia following hip surgery.



Author **Jay S. Magaziner, PhD, MSHyg**, professor and chair of the Department of Epidemiology and Public

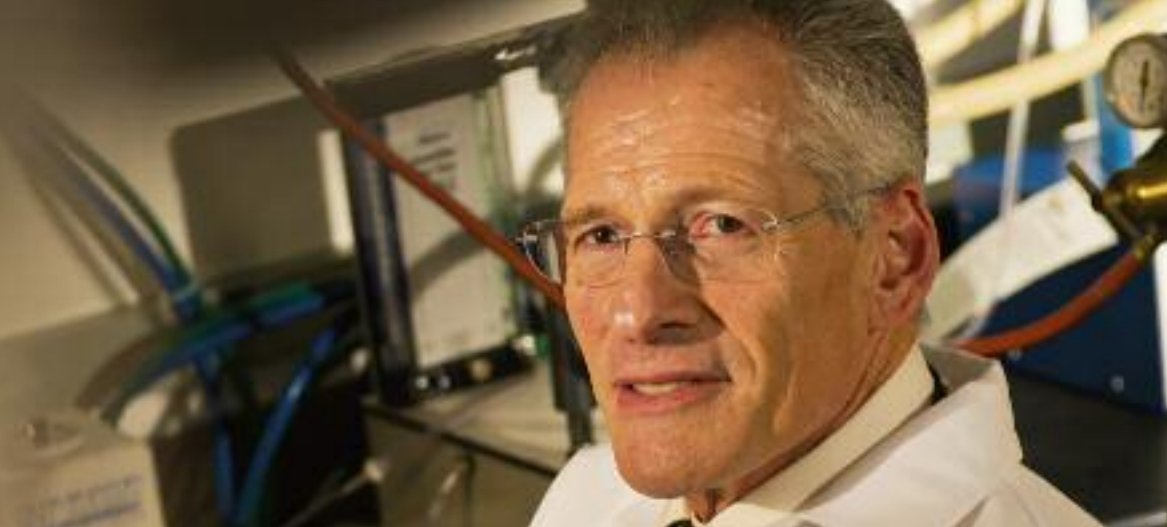
Health, found that more than half of anemic patients in the study did not need blood transfusions as they recovered from surgery. Doctors have long assumed that transfusions strengthen patients weakened by anemia, improving their chances of recovery.

The study of more than 2,000 patients found no significant difference in rate of recovery between patients who received transfusions at a moderate level of anemia and those who did not receive transfusions until their anemia was more advanced.

#### THE ECONOMY AND PUBLIC HEALTH

There could be a looming health crisis in the wake of rising mortgage delinquencies and home foreclosures, according to a study led by the Organized Research

ALAN I. FADEN, MD, the David S. Brown Professor in Trauma in the Department of Anesthesiology, leads the innovative Center for Shock, Trauma and Anesthesiology Research (the STAR Center).



SOM Health Sciences Facility III rendering



YVETTE L. ROOKS, MD, CAQ



**Center on Aging.** Principal investigator **Dawn E. Alley, PhD**, assistant professor of epidemiology and public health, focused on adults over 50 and **found high rates of depression among those behind in their mortgage payments.** Dr. Alley found that falling behind on a mortgage could have long-running health implications for an older person with chronic conditions such as diabetes or hypertension. The study, published in the *American Journal of Public Health*, is the first long-term survey of the impact the housing crisis is having on older Americans.

#### CRACKING THE GENOMIC CODE OF A DEADLY BACTERIA

A team led by Institute for Genome Sciences researchers has unraveled the genomic code of the *E. coli* bacteria that caused a deadly outbreak in Germany. Dozens died in the outbreak that sickened



thousands in Germany, Sweden and the U.S. **David A. Rasko, PhD**, assistant professor of microbiology and immunology, authored the report, which was published in *The New England Journal of Medicine*. The

article describes how researchers around the globe worked together with cutting-edge technology to sequence and analyze the genomics of *E. coli* samples from the outbreak.

The analysis occurred rapidly enough to inform the physicians treating people who were infected and assist epidemiologists tracing the source of the pathogen. **The research may be the first time that such a comprehensive scientific analysis of an emerging pathogen took place in the first days and weeks of an outbreak.**

#### CLINICAL CARE

##### PROMOTING BENCH-TO-BEDSIDE RESEARCH

The School of Medicine has established a new Clinical and Translational Sciences Institute (CTSI) to foster the translation of fundamental science to patient care and community health. The institute is a unique umbrella organization that creates a multi-disciplinary infrastructure to facilitate the rapid advancement of basic science research discoveries into novel therapies to treat and prevent serious chronic conditions and improve human health. Its research and education efforts will particularly target health disparities among underserved populations in Baltimore and beyond. **The new institute**



is led by co-directors **Alan R. Shuldiner, MD**, and **Stephen Davis, MBBS**. Dr. Shuldiner is the John L. Whitehurst Endowed Professor of Medicine and associate dean for personalized and genomic medicine. Dr. Davis is the Dr. Theodore E. Woodward Chair in the Department of Medicine and professor of medicine. The CTSI will focus on six research areas: diabetes, heart disease, cancer, schizophrenia, head injury and infectious and inflammatory diseases.

##### CANCER CENTER AMONG BEST IN THE NATION

The University of Maryland Marlene and Stewart Greenebaum Cancer Center remains **one of the nation's top cancer centers**, after winning renewal of its **National Cancer Institute (NCI) designation for five years**, along with **\$7.6 million in new federal funding for cancer research**. The NCI bestows this special designation in recognition of scientific excellence and outstanding patient care. **Kevin J. Cullen, MD**, professor of medicine, is the director of the Greenebaum Cancer Center, which was first named an

# UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE HIGHLIGHTS



KEVIN J. CULLEN, MD



JESSICA SHIU, MD/PhD student



DARRELL KIRCH, MD

NCI-designated center in 2008. The NCI renewed the designation following an exhaustive review process, which included an 1,100-page grant proposal and site visit by a team of two dozen NCI-appointed scientists.

## EDUCATION

### MAKING PRIMARY CARE A PRIORITY

With primary care expected to play a key role in national health care reform, the University of Maryland School of Medicine will be using a five-year, \$877,000 grant from the federal Health Resources and Services Administration to develop a program aimed at increasing the number of medical stu-



dents who choose primary care specialties. **Richard Colgan, MD**, associate professor of family and community medicine, is lead investigator of the project to address the drastic decrease in medical students choosing primary care over the past decade. A multi-disciplinary team featuring faculty from family medicine, pediatrics and internal medicine will create a special Primary Care Track, an ambitious academic program that will allow students to gain hands-on experience throughout their four years of medical school.

### GRADUATION AND INSPIRATION

A special speaker inspired the graduates of the **Class of 2012**, as they received their doctoral hoods in a convocation ceremony at the Baltimore Hilton. This year's graduation speaker was **Darrell Kirch, MD**, president and chief executive officer of the Association of American Medical Colleges (AAMC). A distinguished physician, educator and medical scientist, Dr. Kirch is an expert on the nation's health care system, and how academic medicine can transform that system for the better. Pointing out that **50 million Americans don't have health insurance**, Dr. Kirch urged the graduates to help address disparities and injustice in the nation's health care system. He also voiced support for the "medical home" concept in which high-functioning teams across the health professions focus on the patient. The University of Maryland is pioneering the medical home model of care through a strong collaboration with Johns Hopkins University and the Maryland Department of Health and Mental Hygiene.

### ALLIED HEALTH ACHIEVEMENT

It was another successful year for our allied health programs. The Department of Physical Therapy and Rehabilitation Science (PTRS) continues to grow and achieve under the leadership of professor and chair **Mary Rodgers, PT, PhD**. Ranked in the **top 10 percent of physical therapy programs in the nation** by *U.S. News & World Report*, PTRS experienced a **24 percent increase in applications** for its Doctor of Physical Therapy (DPT) program, and initiated a new DPT-PhD dual-degree program.



Graduates of the Department of Medical and Research Technology (DMRT) Class of 2012 received a host of prestigious awards and job offers. Six graduates were inducted into the Phi Kappa Phi honor society, **ranking in the top 10 percent of all graduating students in the nation**. In addition, 77 percent of DMRT graduates



received the American Society for Clinical Pathology National Honor Award. **Sanford A. Stass, MD**, is professor and chair of the department.



## MILESTONES AND TRANSITIONS

### NEW LEADERSHIP FOR RESEARCH AND ACADEMIC AFFAIRS



**Richard N. "Robin" Pierson III, MD**, has been named the new senior associate dean for academic affairs and interim director of research affairs. In his new roles, Dr. Pierson, professor of surgery and chief of surgery at the VA Maryland Health Care System, will oversee the academic and research enterprise of the School of Medicine. He will work to ensure collaboration throughout the medical education enterprise and oversee the development of new initiatives. In addition, he will work collaboratively with the campus to ensure the protection of research subjects, and to support School of Medicine and university interdisciplinary research. Dr. Pierson will also participate in the planning and construction of the new Health Sciences Facility III Research Building.

### NEW JOHN DENNIS CHAIRMAN OF THE DEPARTMENT OF DIAGNOSTIC RADIOLOGY AND NUCLEAR MEDICINE



**Elias R. Melhem, MD**, a physician-scientist with extensive experience in the research and clinical practice of neuroradiol-

ogy, was appointed this summer to serve as the John Dennis Chairman of the Department of Diagnostic Radiology and Nuclear Medicine.

He has most recently served as a vice chair, professor of radiology and neurosurgery and director of the Division of Neuroradiology at the University of Pennsylvania.

Prior to his arrival, the department had been led in the interim by **William F. Regine, MD**, who also serves as professor and Isadore & Fannie Schneider Foxman Endowed Chairman of the Department of Radiation Oncology.

### NEW SENIOR ASSOCIATE DEAN FOR CLINICAL AFFAIRS



**Anthony F. Lehman, MD, MSPH**, is the new senior associate dean for clinical affairs. In his new role, Dr. Lehman — professor and chair of the Department of Psychiatry — will work closely with the University of Maryland Medical Center, the University of Maryland Medical System, the VA Maryland Health Care System, and the medical school's faculty practice plan to strengthen the School of Medicine's clinical affairs efforts. Dr. Lehman will lead the school's clinical initiatives, developing strategies for both inpatient

and outpatient services. He will explore new program developments and work to create new initiatives.

### NEW ASSISTANT DEAN FOR GRADUATE AND POSTDOCTORAL STUDIES



**Dudley Strickland, PhD**, is the new assistant dean for graduate and postdoctoral studies and will oversee the Graduate Program in Life Sciences (GPILS) and the Office of Postdoctoral Scholars.

GPILS provides cutting-edge research training in basic, biomedical, clinical and population science. Dr. Strickland replaces **Margaret M. McCarthy, PhD**, who has been promoted to chair of the Department of Pharmacology. Dr. McCarthy leaves a strong graduate program with a national reputation, and Dr. Strickland plans to continue the program's upward growth and expansion.

In his new role, Dr. Strickland will coordinate student recruitment and support, supervise the development of curricula, oversee faculty membership in the program, and work to raise internal and external funding to support graduate education at the School of Medicine.

## UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE HIGHLIGHTS



MYRON LEVINE, MD



CLAIRE FRASER, PHD

### FACULTY HONORS AND AWARDS



Dean E. Albert Reece, MD, PhD, MBA, has been awarded the prestigious Norbert Freinkel Lecture Award, presented by the American Diabetes Association (ADA).

The annual award honors a researcher who has made outstanding contributions, including scientific publications and presentations, to the understanding and treatment of diabetes and pregnancy.

As this year's honoree, Dean Reece delivered the Norbert Freinkel Award Lecture at the association's 72nd Scientific Sessions in Philadelphia. Dean Reece's lecture, entitled "Unraveling the Biomolecular Mechanisms of Diabetic Embryopathy," examined how diabetes can potentially harm a fetus during pregnancy.

Myron M. Levine, MD, DTPH, founding director of the School of Medicine's Center for Vaccine Development (CVD), and the Simon and Bessie Grollman Distinguished Professor of medicine, pediatrics, microbiology and immunology, and epidemiology and public health, has been awarded the American Society for Microbiology's prestigious Maurice Hilleman/Merck Award.

Dr. Levine has made seminal contributions in vaccine development, conducted studies to determine how certain bacteria cause disease, measured the incidence of specific infectious diseases, and evaluated and introduced new vaccines to help improve public health around the world.



Cardiologist Elijah Saunders, MD, FACC, FACP, FAHA, FASH, professor of medicine and head of the Section of Hypertension, has received the 2011 Herbert W. Nickens Award from the Association of American Medical Colleges (AAMC).

The Nickens Award honors individuals who have made outstanding contributions to promote justice in medical education and health care equality.

For more than 50 years, Dr. Saunders has worked to achieve medical equality and eradicate health care disparities within African-American communities. Dr. Saunders is an international expert on hypertension, consistently recognized for his patient education efforts to raise awareness of high blood pressure and for his exploration of new treatment options for African-Americans.

Claire Fraser, PhD, director of the Institute for Genome Sciences (IGS), and professor of

medicine and microbiology and immunology, has been awarded membership to the Institute of Medicine (IOM) of the National Academies. Election to the IOM is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service.

Dr. Fraser is a world-renowned scientist who has contributed significantly to the development of scientific progress in genomic medicine.

### ENDOWED PROFESSORSHIPS

The endowed chair or professorship is one of the highest honors that can be bestowed upon a faculty member. It recognizes the exceptional performance, reputation and prestige of the faculty member who occupies the position. The endowed professorship is also a powerful recruitment and retention tool.



Stephen Reich, MD, was awarded the Frederick Henry Prince Distinguished Professorship in Neurology. This professorship was established through a generous gift from Diana Prince and her



CLASS OF 2014 charity auction

husband Frederick through the Frederick Henry Prince Memorial Fund, which honors Mr. Prince's great-grandfather and namesake. Mr. Prince, who has Parkinson's disease, is a patient of Dr. Reich.



**Jian-Ying Wang, MD, PhD,** has been named the inaugural Joseph and Corinne Schwartz Endowed Professor in Surgery.

Dr. Wang has been at the School of Medicine since 1984 and is associate chair for basic research in the Department of Surgery and a senior research scientist at the US Department of Veterans Affairs. Family and friends of Dr. Wang came from as far away as China to share this honor with him. The professorship is the gift of Joseph and Corinne Schwartz, longtime benefactors to the University of Maryland.

## COMMUNITY ENGAGEMENT

### HEALTH ENTERPRISE ZONES APPROVED BY MARYLAND LEGISLATURE

State lawmakers have approved a pilot program to reduce health disparities in Maryland through the creation of special Health Enterprise Zones, a concept developed by a work group appointed by

Lieutenant Governor Anthony Brown and chaired by Dean E. Albert Reece, MD, PhD, MBA.

The work group of the Maryland Health Quality and Cost Council recommended tax breaks and other incentives to local health departments and community groups working in underserved zones. The work group found that African-Americans in Maryland are nearly twice as likely to be hospitalized for asthma, hypertension and heart failure. Such disparities in the state cost Medicare an extra \$26 million annually.

### TARGETING HIV



The School of Medicine's Institute of Human Virology, directed by **Robert Gallo, MD**, professor of microbiology and immunology, hosted a campus-wide initiative aimed at addressing the HIV crisis. The University of Maryland Leadership in HIV Summit: Preparing the Future brought together faculty and students from all six of the university's professional schools. The summit included student displays reflecting how being better informed about

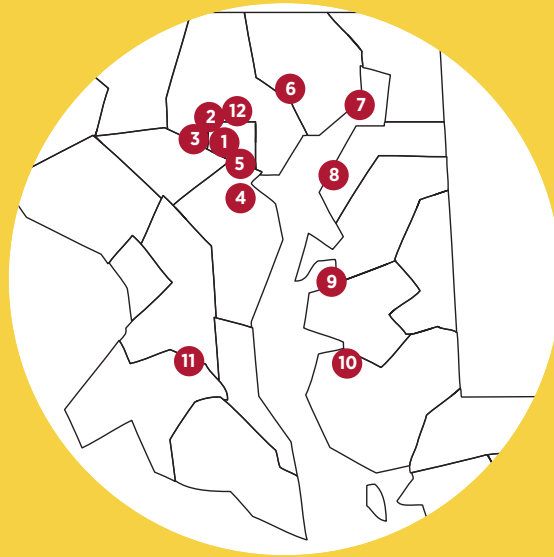
HIV has affected their lives, a campus-wide plenary session, breakout sessions and a community-partnership town hall-style meeting. Summit goals included strategies for reducing new HIV infections, increasing access to care and improving health outcomes for people living with HIV.

### STUDENTS SUPPORT HEALTH CARE FOR THE HOMELESS

The School of Medicine's Class of 2014 hosted the Ninth Annual Second-Year Auction, with proceeds donated to Health Care for the Homeless, a University of Maryland-affiliated charity that works to reduce the incidence and burden of homelessness in Baltimore by providing health care services, housing assistance and education to underserved members of the community. The event was organized by second-year medical students, who also provided the entertainment. Auction items donated by family, friends, faculty and local businesses included gift certificates to local restaurants, spas and salons, and tickets to sporting events, the symphony and museums.

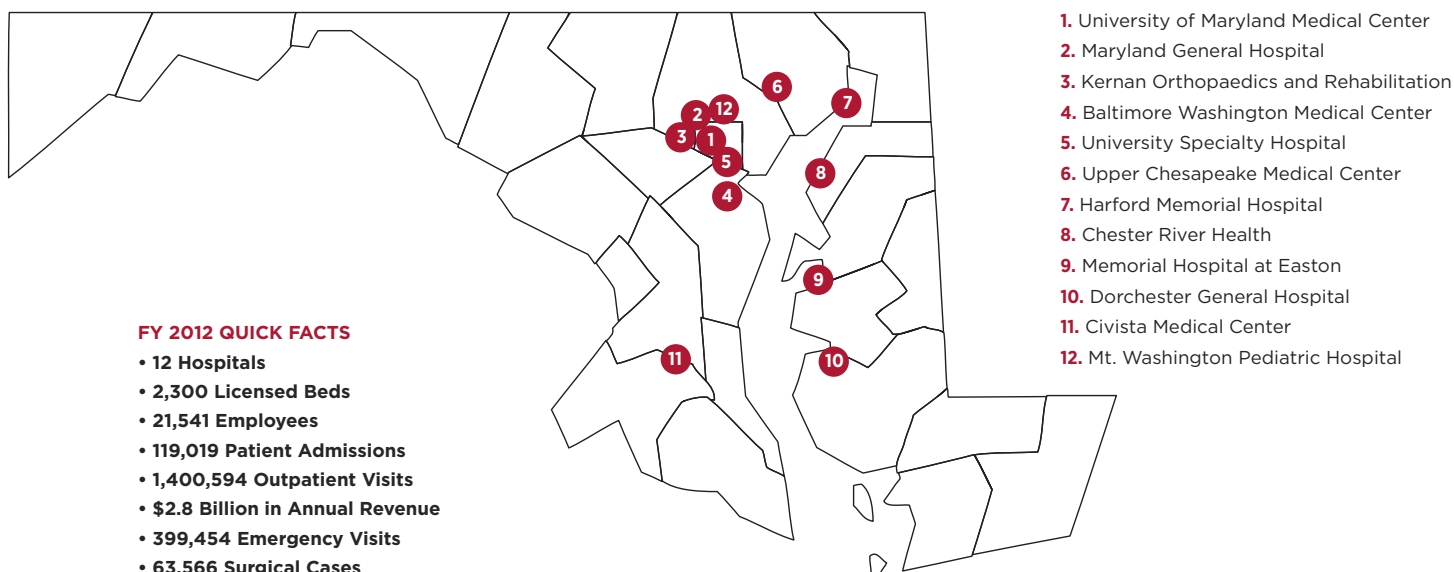


UNIVERSITY OF MARYLAND  
MEDICAL SYSTEM



WHERE  
MARYLAND  
COMES  
FIRST





On any given day, the University of Maryland Medical System strives for excellence.

In 2012, six of the 12 hospitals in the system were recognized among the Top 25 “Best Hospitals in Maryland” by *U.S. News & World Report*. These rankings give UMMS the distinction of having more hospitals in the state’s Top 25 than any other hospital system in Maryland.

## UNIVERSITY OF MARYLAND MEDICAL SYSTEM HIGHLIGHTS

> U.S. Senator BARBARA MIKULSKI visited UMMC in December to discuss current issues affecting health care and education with, from left, HENRY J. FRANEY, executive vice president and chief financial officer for UMMS; E. ALBERT REECE, MD, PhD, MBA, dean of the School of Medicine; ROBERT A. CHRENCIK, MBA, CPA, president and chief executive officer of UMMS; JAY A. PERMAN, MD, president of the University of Maryland, Baltimore; and JEFFREY A. RIVEST, president and chief executive officer of UMMC.

The academic, community and specialty hospitals that comprise the University of Maryland Medical System enjoyed a stellar year of gains in quality and safety, both individually and as an enterprise that ensures Marylanders have access to the best care in the world, close to home. Our partnership with the University of Maryland School of Medicine continues to be a uniquely integrated model that ensures systemwide access to the world-class faculty of the school.

### BALTIMORE WASHINGTON MEDICAL CENTER

Since opening in 1965, Baltimore Washington Medical Center (BWMC) has grown from a small community hospital to a high-performing 308-bed regional medical center with a staff of 2,700. BWMC, which serves the Baltimore-Washington corridor, has been affiliated with the University of Maryland Medical System since 2000.

BWMC is proud of its numerous centers of excellence, including the Tate Cancer Center, the Aiello Breast Center, the Robin E. Pascal Women's Center, the Maryland Vascular Center, the University of Maryland Center for Diabetes and Endocrinology, the Baltimore Washington Spine and Neuroscience Center, the Wound Healing Center and the Joint Replacement Center. It is also home to an emergency department that treats more than 104,000 patients a year — making it one of the busiest in Maryland.

Over the last year, the medical center has continued to expand to meet the needs of the community it serves. BWMC unveiled a new \$31 million surgical suite expansion, increasing the number of operating rooms from 14 to 17. The 27,500-square-foot addition, which also added three shells for

future expansion, not only allows the medical center to perform more surgeries but also enables doctors to complete more complex procedures. The suite consists of a new orthopaedic spine room equipped with 3D imaging capabilities that allow surgeons greater views of the spine; a procedure room that has monitoring equipment designed for colorectal and other minimally invasive procedures that can be performed through tiny incisions; and an operating room that has a control room and video equipment needed for major surgical procedures.

BWMC is one of only nine health care institutions in the United States participating in an international registry of patients suffering from colorectal liver metastasis. Currently, more than 12,000 patients worldwide are part of the survey. One of the principal investigators is Cherif Boutros, MD, MB, ChB, MSc, assistant professor of surgery at the University of Maryland School of Medicine and chair of the Department of Surgical Oncology at BWMC.

BWMC also completed a \$5.6 million, 2,900-square-foot expansion to the Tate Cancer Center by adding the new Trilogy® System, a sophisticated technology that can deliver a high dose of radiation to small tumors with minimal

impact on surrounding tissues, using a technique called stereotactic treatment. The machine can generate three-dimensional images of the tumor and use them to administer image-guided radiation.

These expanded capabilities are examples of BWMC's commitment to providing the highest quality care with advanced technology in a community hospital setting.

The medical center continues to reach out to the community in a variety of ways, such as by starting a farmers' market for staff and community. The Stork's Nest program, which serves underserved and high-risk pregnant women, celebrated its fifth anniversary this year.

### CHESTER RIVER HEALTH

Chester River Health was formed in 1997 to offer state-of-the-art compassionate health care to the residents of Kent and northern Queen Anne's counties. Located on Maryland's Eastern Shore, Chester River Health, a member of the University of Maryland Medical System (UMMS) since July 2008, includes Chester River Hospital Center, Chester River Home Care &



Hospice, Chester River Manor Nursing & Rehabilitation Center and Chester River Health Foundation.

Chester River Hospital (CRH), established in 1935, is a community hospital that provides inpatient services, 24-hour emergency care, surgical services, diagnostic imaging, rehabilitation and oncology. Since merging with UMMS, the hospital has continued to upgrade and enhance its facilities and has implemented new technology, including a sophisticated health information system in 2011. Moving to this health information platform has allowed CRH to improve quality, safety and efficiency at the hospital. This new platform allows clinical staff to provide added safety features, such as bedside bar-coded medication administration. Over the last year, CRH has also added new patient care programs and services, including a Coumadin clinic that, with the expertise of the Chester River pharmacy clinical staff, offers 24-hour emergency coverage and point-of-care testing, with immediate results and dosage adjustments for patients taking anticoagulant medications.

Chester River Health opened Galena Family Medicine in September 2011 to expand primary care services in the northern part of

Kent County and southern Cecil County. CRH also established its newest office practice, Chester River Internal Medicine, in April 2011 to offer additional primary care services for adult patients in Kent County.

The Taking Charge of Your Heart program was launched in 2011 to help patients with congestive heart failure (CHF). The program helps CHF patients manage this chronic condition by providing one-on-one medication education and follow-up visits and calls with home care nurses.

The boards of directors of Chester River Health and Shore Health authorized a Mid-Shore Regionalization Study to explore the potential benefits of a regionalized approach serving residents of Kent, Talbot, Dorchester, Caroline and Queen Anne's counties. The study committee is composed of an equal number of board members from each health system.

Looking to the future, Chester River Health will begin a renovation and redesign project for its Emergency Department that will transform the way emergency care is provided to the community.

#### CIVISTA HEALTH

Civista Health is a regional integrated health system serving Charles County and the surrounding areas of southern Maryland. It became the newest member of the University of Maryland Medical System on July 1, 2011, and represents the first expansion of UMMS into the Washington, DC, area. The affiliation with UMMS has contributed to Civista's continued growth by improvement of the facilities, an increase of the size of the campus and a robust physician recruitment initiative to accommodate the growth of the community and the need for expanded medical services.

In its first full year of affiliation with UMMS, Civista Health showed remarkable gains in both financial and quality performance: Civista Health Inc. more than doubled its budgeted income from operations and its net income. And in quality-based measures, Civista Medical Center achieved a composite score of 99 percent or greater for the Hospital Quality Alliance measures for the first three quarters of FY12. Performance scores for acute myocardial infarction and children's asthma care have maintained 100 percent performance for the first three quarters of FY12.

## UNIVERSITY OF MARYLAND MEDICAL SYSTEM HIGHLIGHTS

> Kernan is Maryland's first hospital to build a healing garden. The garden provides a beautiful and comforting environment for patients, families, visitors and staff. The garden is designed as a therapeutic tool for teaching patients to manage newly acquired physical challenges as they transition into the community or renew their interest in leisure activities.



< Civista completed a comprehensive community health needs assessment in 2011 in partnership with the Charles County Health Department.

The assessment led to an action plan that includes improving access to produce from farmers' markets, prevention and screening for cancer and child dental health, childhood obesity intervention and activities to reduce senior citizens' risk of injury from falling down.

### Eva Irene Davis Pavilion

The Civista Health Foundation Board of Directors announced that the former Physicians Memorial Hospital building has been renamed The Eva Irene Davis Pavilion, honoring the estate gift made by the late philanthropist who also was an employee of the foundation and a beloved member of the Charles County community.

Greater Baden Medical Services Inc. will lease the first floor of the building and offer care to those who are uninsured or underinsured. Civista and Greater Baden officials worked with the Southern Maryland delegation to secure bond funding for \$650,000 to renovate the facility.

With financial support from UMMS, the Civista Center for Wound Healing opened this summer offering highly specialized care for chronic wounds, including negative-pressure wound therapy, bioengineered tissue, biosynthetic dressings, growth-factor therapies and hyperbaric oxygen therapy.

In August and September 2011, Southern Maryland experienced a 5.8 magnitude earthquake and two tropical storms that damaged the hospital building masonry,

drywall and expansion joints. While there has been no interruption to patient services, repair of the damaged structure continues.

To meet the community's need, Civista worked with UMMS Physician Recruitment Services to attract several specialists. And the new Nagula Conference Center at Civista Medical Center provides physicians and staff with a dedicated space for continuing education, seminars and lectures.

For its progressive employment practices to promote professional fulfillment and wellness among staff, Civista was selected to receive the Workplace Excellence Award and the Health & Wellness Trailblazer Award this year for the eighth consecutive year. The Alliance for Workplace Excellence selected winners in the Mid-Atlantic for excellence in workforce demographics, management practices, employee engagement, corporate social responsibility, diversity and inclusion.

### KERNAN ORTHOPAEDICS AND REHABILITATION

Kernan Orthopaedics and Rehabilitation is Maryland's first orthopaedic specialty hospital, serving the Baltimore community for 115 years and offering the most advanced orthopaedic surgery for adults and children.

With 137 beds, Kernan is the largest inpatient rehabilitation hospital and provider of rehabilitation services in the state, where patients make the transition to rehabilitation after recovering from traumatic injury, cardiovascular events such as heart attack and stroke, and other illnesses.

The staff incorporates an interdisciplinary team approach to patient care for comprehensive inpatient and outpatient services. Specialty programs include spinal cord injury, traumatic brain injury, stroke, orthopaedic and specialty services for rheumatology, multiple sclerosis, Parkinson's disease and other neurodegenerative disorders.

Kernan provides a unique dental service for adults and children with developmental disabilities. The hospital's dental providers have extensive experience caring for individuals with physical and/or mental impairments.

For rehabilitation of patients with spinal cord injuries or who have had a stroke, Kernan is one of the few hospitals in the region to offer a robotic treadmill called Lokomat.

Kernan is the first rehabilitation hospital in Maryland to develop an adaptive sports program. Now in its fourth year, the program



offers patients an opportunity to try sports that otherwise would be beyond their reach. The hospital built an adaptive sports court to help patients improve their overall health through physical activity.

Kernan is also the only hospital in Maryland to offer an adaptive golf program, designed to help patients improve motor skills, balance and coordination after a stroke or other traumatic injury.

#### MARYLAND GENERAL HOSPITAL

Maryland General Hospital (MGH) is a 164-bed hospital that offers a full spectrum of care to more than 110,000 patients in Baltimore annually. Founded by local physicians in 1881, it has always been a teaching hospital and is transforming into a premier university-based community hospital in partnership with the University of Maryland Medical Center (UMMC) and School of Medicine (SOM).

The hospital provides care in more than 20 medical specialties. It is committed to safe patient care and this year **won the Delmarva Foundation Quality Award. This award is given to hospitals that score 90 percent or higher on 18 quality indicators over four con-**

**secutive quarters.** In fact, MGH scored at 100 percent for six of the last 13 months for which data was available.

Linden Medical Group is MGH's outpatient practice. The Armory Place location includes several practices, including family medicine, internal medicine, orthopaedics and a satellite of the SOM Institute of Human Virology. It offers clinical expertise in virology, access to clinical research trials, and nursing and social work services for individuals with HIV/AIDS and other chronic viral diseases.

In March, Maryland General Hospital opened a new center for patients with chronic, non-healing wounds. **The Maryland Wound Healing Center provides hospital-based outpatient care for people with wounds that fail to heal with standard treatment.** Two mono-place hyperbaric oxygen chambers and an expanded vascular lab allow the center to offer a comprehensive, one-stop approach to wound treatment.

The Maryland Wound Healing Center fills a vital need in the community because of the prevalence of diabetes and vascular problems that can cause serious, non-healing wounds. Chronic, non-healing wounds cost an

estimated \$25 billion annually and often entail lengthy hospital stays. The center's medical director, **Kapil Gopal, MD, MBA**, is an assistant professor of surgery at the School of Medicine and a vascular surgeon at Maryland General and UMMC. Dr. Gopal leads the multidisciplinary team of family practitioners, vascular and general surgeons, internists, podiatrists, and nurses certified in the treatment of chronic wounds.

The Wound Center is located adjacent to MGH's Maryland Vascular Center. **Michael P. Lilly, MD**, professor of surgery at the School of Medicine, is the chief of surgery and director of the Maryland Vascular Center.

MGH is in the process of redevelopment to more closely align with UMMC and SOM. The expansion of UMMC/SOM clinical services to the MGH campus already has contributed to an unprecedented 12.6 percent growth in the number of surgical procedures performed in the hospital's new state-of-the-art surgical facilities. Surgeons from the SOM, including orthopaedic surgeons at the R Adams Cowley Shock Trauma Center, perform select surgeries at MGH.

# UNIVERSITY OF MARYLAND MEDICAL SYSTEM HIGHLIGHTS



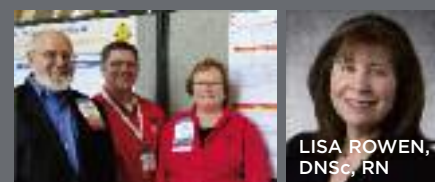
Actress Miranda Cosgrove  
with MWPH patients.

## UMMC AND SHORE HEALTH NURSES CO-HOST MAGNET CONVENTION

In October of 2011, more than 7,500 nurse leaders from around the world came to Baltimore for the American Nurses Credentialing Center National Magnet Conference. UMMC and Shore Health are among the six Magnet-designated hospitals in Maryland who hosted the international meeting and provided more than 150 volunteers for the three-day event. LISA ROWEN, DNSc, RN, senior vice president for patient care services and chief nursing officer at UMMC, chaired the organizing committee of Maryland Magnet hospitals. Three teams of UMMC nurses were among the 120 poster presenters, chosen from more than 1,300 submissions from around the world.



Shore Health Nurses



LISA ROWEN,  
DNSc, RN

## MT. WASHINGTON PEDIATRIC HOSPITAL

Mt. Washington Pediatric Hospital is a 102-bed pediatric specialty care and rehabilitation hospital in northwest Baltimore that is jointly owned and operated by the University of Maryland Medical System and the Johns Hopkins Health System. For the past 90 years, Mt. Washington Pediatric Hospital's mission has been to provide the highest quality of care in a nurturing environment so that children can heal and grow.

The hospital offers state-of-the-art treatments through comprehensive inpatient, outpatient and day-treatment programs and works closely with Maryland's leading hospitals and pediatricians to provide children with a bridge to better health.

MWPH is wrapping up a \$9.2 million capital campaign to upgrade and expand the Center for Neonatal Transitional Care (CNTC), to renovate the main lobby and outside entrance, and to bolster the hospital's endowment. With this expanded space, the CNTC will be able to treat 100 more infants each year who are born prematurely or born with complicated medical needs. The final stages of the capital project will be completed in fall 2012.

Therapists at MWPH saw new patients during FY 2012 with balance and mobility issues at the new Balance Clinic. Therapy is conducted, in part, with the use of the Neuro-Com Balance Master,<sup>®</sup> which was purchased with funds provided by the Mt. Washington Pediatric Foundation. The device offers quantifiable results that therapists find enormously helpful in making objective patient evaluations.

Since its earliest days, Mt. Washington Pediatric Hospital has taken an active role in the community, providing education and outreach programs to assist Baltimore-area families and agencies catering to the needs of children. The Community Advocacy and Injury Prevention Program, new this year, has made an impact on nearly 5,000 families, providing education and tools to live a healthier life. Goals included lead-poisoning prevention, better nutrition, infant care and parenting skills. Mt. Washington Pediatric has also reached out to the community by partnering with University of Maryland Medical System on events throughout the year, including Spring into Good Health and Fall Back into Health.

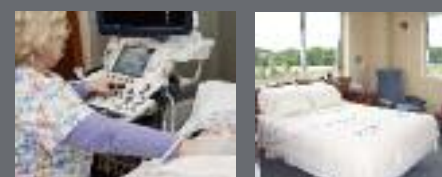
## SHORE HEALTH

Shore Health is the primary provider of health care for the more than 150,000 residents of Maryland's Mid-Shore region. For more than 100 years, the staff at the 136-bed Memorial Hospital at Easton and the 52-bed Dorchester General Hospital in Cambridge have cared for their friends and neighbors through all the cycles of life. Through an outpatient network that spans Caroline, Dorchester, Talbot and Queen Anne's counties, Shore Health takes health care into the communities where people live and work, providing primary and specialty care, diagnostic and imaging services and comprehensive medical rehabilitation. Shore Health centers of excellence specialize in cancer, diabetes, digestive health and surgery. The Queen Anne's Emergency Center in Queenstown offers 24-hour-a-day access to emergency care by SOM board-certified emergency medicine physicians, experienced emergency nurses and hospital-experienced radiology and laboratory technologists.

In October 2011, Kenneth Kozel, MBA, FACHE, was named president and CEO for Shore Health. A health care professional for



< The Shore Medical Pavilion opened in December 2011, further expanding the medical services Shore Health offers for Queen Anne's County residents. Maryland Primary Care Physicians and specialists in urology, neurology, gynecology, otolaryngology and cardiology are based at the medical pavilion, where their patients have convenient access to a diagnostic imaging center, physical and speech therapy services, and a four-bed diagnostic sleep center.



more than 23 years, he came to Shore Health from Upper Chesapeake Health in Harford County, where he was president of that two-hospital system. He has a track record of collaborating with physicians, the health care team and members of the community to expand services, programs and facilities.

Shore Health ranked among the top Maryland Hospitals when *U.S. News & World Report* released its 2012-13 Best Hospitals report, which also ranked Shore Health No. 1 on the Eastern Shore. Shore Health's Memorial Hospital at Easton achieved the No. 9 position in the state and was cited as high-performing in the following categories: Diabetes & Endocrinology, Gastroenterology, Geriatrics, Gynecology, Nephrology, Neurology, Neurosurgery, Orthopaedics, Pulmonology and Urology.

The boards of directors of Chester River Health and Shore Health authorized a Mid-Shore Regionalization Study to explore the potential benefits of a regionalized approach to serving residents of Kent, Talbot, Dorchester, Caroline and Queen Anne's counties. The study committee is composed of an equal number of board members from each health system.

**Plans are progressing for construction of a 126-bed regional medical center in Easton** to replace Memorial Hospital. The certificate of need is scheduled to be filed with the State of Maryland in September 2012 with the potential for groundbreaking in the spring of 2013 and grand opening in 2015.

A \$2.5 million renovation begun in the fall of 2011 at Shore Behavioral Health at Dorchester General Hospital in Cambridge will increase this inpatient psychiatric unit from 16 to 24 beds and enhance the facility's ability to meet the needs of patients who have a dual diagnosis of mental health and substance abuse issues.

The Requard Center for Acute Rehabilitation at Memorial Hospital earned re-accreditation by the Commission on Accreditation of Rehabilitation Facilities (CARF) for another three-year term. The Requard Center's stroke specialty program was also awarded CARF accreditation for the first time.

**Terry Detrich, MD**, earned the 2011 **Arthur B. Cecil Jr., MD**, Award for Excellence in Healthcare Improvement. A neurologist who has treated Eastern Shore patients for nearly four decades, Dr. Detrich is medical director of the Primary Stroke Center at the

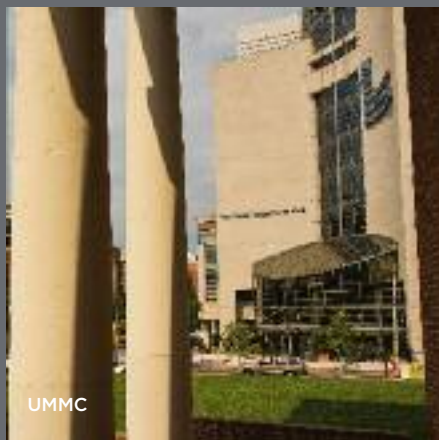
Memorial Hospital at Easton. He and his team developed a stroke program that has been recognized by the Maryland Institute for Emergency Medical Services Systems and by the American Heart Association and American Stroke Association for achieving the highest standards of stroke care for more than 24 consecutive months.

#### UNIVERSITY OF MARYLAND MEDICAL CENTER

The University of Maryland Medical Center (UMMC) is a 779-bed teaching hospital in Baltimore and the flagship institution of the University of Maryland Medical System. The attending physicians at UMMC are faculty members at the University of Maryland School of Medicine.

**As a leader in trauma, cancer care, transplantation, stroke and neurocare, cardiac care, and women's and children's health**, UMMC treats patients who are referred nationally and regionally for advanced medical, surgical and critical care. UMMC has one of the nation's largest kidney transplant programs, as well as scores of other programs that improve the physical and mental health of thousands of people on any given day.

# UNIVERSITY OF MARYLAND MEDICAL SYSTEM HIGHLIGHTS



## National Rankings Rise

The Medical Center's profile rose again this year in the *U.S. News & World Report* 2012-13 Best Hospitals rankings, gaining significant ground in numerous specialty categories, and **earning spots in the Top 50 for nine specialty areas**. UMMC rose to the No. 9 spot nationally for Nephrology, which includes kidney transplant, and to the No. 11 spots in Cancer as well as in Diabetes & Endocrinology categories. In Urology, UMMC rose to No. 15. UMMC also ranked in the Top 50 in the categories for Cardiology & Heart Surgery (No. 27); Ear, Nose & Throat (No. 24); Gynecology (No. 49); Neurology & Neurosurgery (No. 48); and Pulmonology (No. 26). The magazine also recognized UMMC as high-performing in Gastroenterology, Geriatrics and Orthopaedics.

**For the sixth year in a row, The Leapfrog Group ranked UMMC as a top hospital for patient safety and quality of care.** The Medical Center is **one of only two hospitals in the country** to make this stringent list for all six years. And Becker's Hospital Review recognized UMMC as one of "100 Great Hospitals to Know" for 2012, and named **Jeffrey A. Rivest**, UMMC president and CEO, to its list of "100 Leaders of Great Hospitals."

## Achievements in Surgery and Patient Care

A team of plastic and reconstructive surgeons with expertise in craniofacial surgery and reconstructive microsurgery made history by performing **the most extensive full face transplant in the world**. The success of the surgery was due to the teamwork of hundreds of staff at UMMC and its R Adams Cowley Shock Trauma Center, many of whom were involved in the care of the patient for more than a year before the surgery, during extensive preparation in the months before the surgery and afterward during his recovery.

The University of Maryland Children's Hospital grew to provide **more comprehensive services for children born with heart disease, as well as adults with congenital heart disorders**. The UM Children's Hospital added four new faculty physicians, including a pediatric heart surgeon, a non-invasive imaging specialist and electrophysiologist, increasing the hospital's ability to diagnose and treat complex heart disease in patients of all ages.

University of Maryland Heart Center became the first hospital in Maryland to perform a successful heart transplant on a patient who survived with a total artificial heart until a donor heart became available. The UM Heart

Center also began offering transcatheter aortic valve replacements for patients with severe aortic stenosis who have no other treatment options, and who otherwise would die without this minimally invasive procedure.

UMMC continues to be a leader in organ transplant. University of Maryland School of Medicine faculty in the Division of Transplantation gave more than 40 presentations at the American Transplant Congress in Boston, Mass., in June 2012. **Surgeons performed 78 liver transplants during the calendar year 2011 — the most in the division's history and more than any other hospital in Maryland.**

And the University of Maryland Marlene and Stewart Greenebaum Cancer Center won renewal of its **National Cancer Institute (NCI) designation for five more years, along with \$7.6 million in new federal funding for cancer research**. The rapidly growing center, which is one of only 66 NCI-designated cancer centers in the United States, treated more than 7,800 patients in 2011.



#### UPPER CHESAPEAKE HEALTH Breast Center



MEGHAN MILBURN, MD



SANKARI SIVASAILAM, MD



#### UNIVERSITY SPECIALTY HOSPITAL

University Specialty Hospital (USH) provides chronic care for people who have experienced injury or illness. The staff focuses on the complex needs of chronically ill patients, with the goal of helping them return to the community with as much independence as possible. Many of its patients are recovering from brain injury or are dependent on ventilators.

During 2012, USH began the process of moving its services to two other hospitals in the University of Maryland Medical System — Kernan Orthopaedics and Rehabilitation and Maryland General Hospital.

#### UPPER CHESAPEAKE HEALTH

For the past century, Upper Chesapeake Health (UCH) has offered the residents of northeastern Maryland an unparalleled combination of award-winning clinical expertise, leading-edge technology and an exceptional patient experience. UCH partnered with the University of Maryland Medical System in July 2009 to continue its commitment to provide this growing community with expanded clinical services, programs and facilities and physician recruitment.

Upper Chesapeake Health includes two acute care hospitals — Upper Chesapeake

Medical Center (UCMC) in Bel Air and Harford Memorial Hospital (HMH) in Havre de Grace. Also on the Bel Air campus are two medical office buildings, an Ambulatory Care Center and the Upper Chesapeake Health Foundation.

Upper Chesapeake Health brought physicians on board last year in specialties such as bariatric and general surgery, family practice, obstetrics and gynecology, neurosurgery, thoracic surgery, breast surgery and hospitalist medicine. UCH also recruited a number of pediatric and adult specialists through the University of Maryland School of Medicine.

Clinical programs that saw significant growth included cardiovascular care and several outpatient service areas. The Primary Stroke Centers and Respiratory Care departments at both hospitals earned recognition from the American Heart and American Stroke Associations and the American Association for Respiratory Care, respectively. The oncology program expanded in anticipation of the opening of a comprehensive cancer center in Bel Air in late 2013.

The partnership with the University of Maryland Medical System has yielded:

#### Multidisciplinary Breast and Lung Clinics

Patients are now seen at multidisciplinary clinics for lung and breast cancer at Pavilion II on the UCMC campus in Bel Air. Previously, they had to access cancer services at multiple sites.

#### Pelvic Floor Program

The Pelvic Floor Program at Upper Chesapeake Health is led by **Harry W. Johnson Jr., MD**, associate vice chair and associate professor, obstetrics, gynecology and reproductive sciences at the SOM and director of the Division of Urogynecology and Pelvic Reconstruction at the University of Maryland Medical Center. The very busy and highly specialized physical therapy program helps women (and some men) with various pelvic floor disorders, such as urinary incontinence. The program focuses on alleviating discomfort and returning patients to normal function.

#### Van Transport

Patients in northeast Maryland can access specialty care at UMMC through the UM/UCH Connector Service, courtesy of the UMMC Guest Services Department. Free round-trip shuttle service is available from the Upper Chesapeake campus in Bel Air to UMMC three days a week.

# UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

**FACULTY 2,836**

- 1,320 Full-time
- 291 Part-time
- 1,225 Adjunct

**STAFF 3,057**

- Full-time Administrative, Research & Clinical Staff, including University of Maryland Faculty Physicians Inc.

**STUDENTS 1,338**

- 642 Medical (MD)
- 36 MD/PhD
- 340 Graduate (MS/PhD)
- 13 Genetic Counseling (MS)
- 70 Medical & Research Technology (BS, MS)
- 185 Physical Therapy (DPT, PhD)
- 52 Public Health (MPH)

**POST-DOCTORAL FELLOWS 557**

- 214 Clinical
- 343 Research

**RESIDENTS 606**

- Trained by SOM Faculty

**TOTAL 8,394**

# FINANCIAL

OUR INCOME

|  |                      |
|--|----------------------|
| Tuition and Fees                         | \$ 24,754,000        |
| State Appropriation                      | 30,851,000           |
| Total Grants and Contracts               | 429,911,000          |
| Gifts, Endowments and Other Expenses     | 12,366,000           |
| Medical Service Plan                     | 244,200,000          |
| Reimbursements from Affiliated Hospitals | 143,005,000          |
| TOTAL                                    | <b>\$885,087,000</b> |

OUR EXPENSES

|                            |                      |
|----------------------------|----------------------|
| Instruction/Training       | \$ 81,825,000        |
| Research                   | 413,188,000          |
| Clinical Service           | 358,230,000          |
| General and Administrative | 31,844,000           |
| TOTAL                      | <b>\$885,087,000</b> |

## UNIVERSITY OF MARYLAND MEDICAL SYSTEM

# REPORT

### OUR INCOME

|  |                        |
|--|------------------------|
| From services to inpatients  | \$ 1,736,836,000       |
| From services to outpatients   | 1,030,789,000          |
| <b>These services produced total gross revenue of</b>  | <b>\$2,767,625,000</b> |
| Less amounts we had to deduct for contractual allowances to third party payors                                     | (207,760,000)          |
| Less the cost of charity care for persons without the ability to pay for their care and for uncollectible accounts | (266,528,000)          |
| Therefore, our net revenue from patient care services was  | 2,293,337,000          |
| In addition, our other revenue from operating, including state support, was  | 77,718,000             |
| <b>Thus, our total revenue from operations was</b>   | <b>\$2,371,055,000</b> |

### OUR EXPENSES

|  |                        |
|--|------------------------|
| For salaries, wages and fringe benefits to our employees     | \$ 1,153,105,000       |
| For medical supplies, pharmaceuticals and purchased services | 954,000,000            |
| For depreciation on our buildings and equipment              | 130,149,000            |
| For interest costs on our outstanding bonds                  | 56,465,000             |
| <b>All of these operating expenses totaled</b>               | <b>\$2,293,719,000</b> |

### OUR NET RESULTS

|   |                      |
|---|----------------------|
| Income from operations  | 77,336,000           |
| Plus non-operating revenue net of expenses, which excludes changes in market value of financial investments | 12,758,000           |
| <b>Net income</b>   | <b>\$ 90,094,000</b> |

*\*Fiscal Year 2012 figures are unaudited and do not include Upper Chesapeake Health*

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