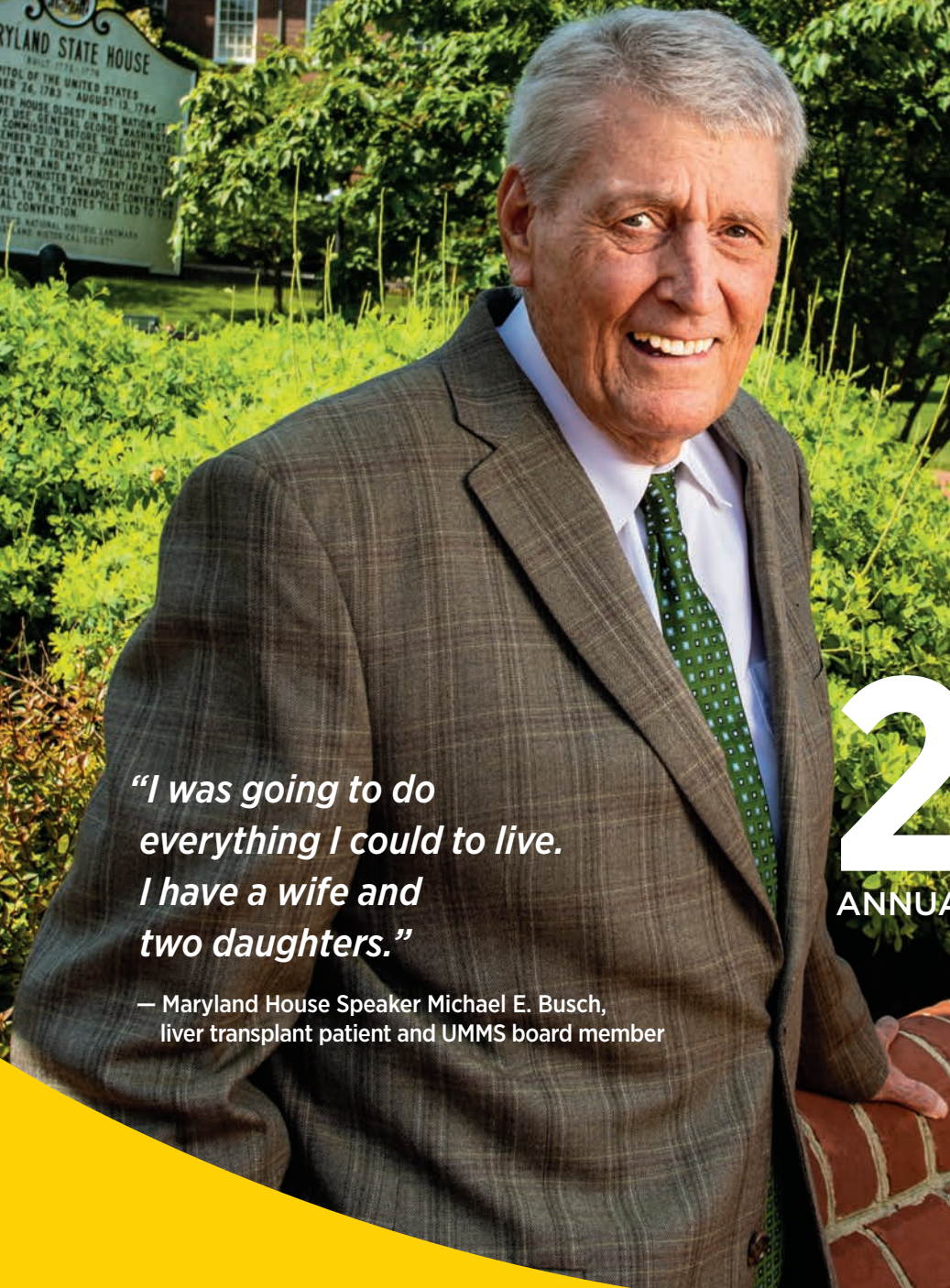




The Power of Partnership

UNIVERSITY of MARYLAND Medicine



*"I was going to do
everything I could to live.
I have a wife and
two daughters."*

— Maryland House Speaker Michael E. Busch,
liver transplant patient and UMMS board member

2018

ANNUAL REPORT



Marylanders

are at the heart of our mission.

Discovery-based health care is the foundation of **UNIVERSITY of MARYLAND** **Medicine**



The Power of Partnership

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2018

ANNUAL REPORT



A Shared Vision

University of Maryland Medicine

When we announced the shared vision of our two organizations for University of Maryland Medicine in 2013, we set the stage for what has become one of the most successful partnerships in academic medicine today: world-class clinical care, innovative research and medical education.

The **University of Maryland Medical System (UMMS)** comprises more than 14 academic, community and specialty hospitals, as well as several outpatient centers across the state. Its flagship hospital, the **University of Maryland Medical Center (UMMC)**, is the heart of our partnership – with faculty physicians and surgeons from the **University of Maryland School of Medicine (UMSOM)** who provide expert care for patients while leading fundamental and clinical research and educating tomorrow’s physicians.

As you will read in this report, our partnership has grown even deeper and broader over the past year, with greater integration of services across the system and a broader reach of physicians and locations, to bring the best care possible to our patients, wherever they are.

Research and scientific discovery is the foundation of this care. During the year, we were excited to open our 15th UMSOM building – the new Health Sciences Research Facility III – one of the most advanced research buildings of its kind in the nation. With state-of-the-art laboratories and the latest medical technology available, the 10-story, 430,000-square-foot facility exemplifies UM Medicine’s rise to the uppermost echelon of academic research medical institutions.

By focusing on the tripartite mission of patient care, research and education, UM Medicine is at the forefront in beating the toughest foes – cancer, heart disease, organ failure, HIV/AIDS, opioid addiction, drug-resistant infectious diseases – as well as the forces that lead to disparities in health care access here and around the world.

In relentless pursuit of excellence, we remain sincerely yours,

E. Albert Reece, MD, PhD, MBA
Executive Vice President for Medical Affairs, UM Baltimore
John Z. and Akiko K. Bowers Distinguished Professor and
Dean, University of Maryland School of Medicine

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

New UMSOM Research Building



Expanding Biomedical Research

The largest building on the University of Maryland, Baltimore campus opened this year. The 430,000 square feet of advanced biomedical research space at **670 W. Baltimore Street** will advance the discoveries of faculty from the UMSOM and benefit patients at UMMC and other hospitals in UMMS.

In Fiscal 2018, total grants and contracts exceeded **\$536 million** (20.1 percent higher than in Fiscal 2017).



Dean Reece and Mr. Chrencik stand above the newly named **UNIVERSITY OF MARYLAND MEDICAL SYSTEM ATRIUM**, where more than 750 people can gather. This collaborative hub will host leaders, scientists and clinicians across UM Medicine.

Our 2018 annual report shows how, together, we are harnessing the power of partnership.





The Homer Gudelsky Building

UNIVERSITY
of MARYLAND
MEDICAL
CENTER



The University of Maryland Medical Center

WHERE IT ALL

Comes Together

The nexus of our partnership is the University of Maryland Medical Center, which comprises two campuses in Baltimore with a total of nearly 1,000 beds, as well as specialty and primary care outpatient locations in the metro area.

BRIDGE HALL
...LL. CONSTRUCTED IN 1812. IS
...ST DEAN OF THE UNIVERSITY
...FOL OF MEDICINE. DR. JOHN B.
...FOR ITS UNIQUE CLASSICAL
...IS THE OLDEST BUILDING IN
...ED CONTINUOUSLY FOR MEDICAL
...MARYLAND GENERAL ASSEMBLY
...TO BE FOUNDED IN THE UNITED
...ING MEMBERS COLLEGE OF PHYSIC
...E. 1913. AND COLLEGE BECAME
...DOMS. 1915. THE SCHOOL BECAME
...ATE UNIVERSITY SYSTEM IN 1920.
...LAND HISTORICAL SOCIETY



Dr. Suntha



As the flagship academic medical center of the University of Maryland Medical System (UMMS), the University of Maryland Medical Center (UMMC) serves as a resource for community hospitals in UMMS.

The nearly 1,200 attending physicians are all University of Maryland School of Medicine (UMSOM) employed faculty physicians and surgeons, as is Mohan Suntha, MD, MBA, president and chief executive officer of UMMC, and the Marlene and Stewart Greenebaum Professor in the Department of Radiation Oncology at the UMSOM.

UM Medicine faculty physicians and staff train the next generation of health care professionals in medicine, surgery, nursing, pharmacy, rehabilitation therapy, dentistry, hospital social work and other disciplines, to care for patients and gain the expertise of world-class faculty.

UMMC ranks as a "TOP HOSPITAL" by *U.S. News and World Report*.

—
Many clinical programs were also ranked.

The University of Maryland Medical Center

Raising the Quality of Care and the Patient Experience

The University of Maryland Medical Center's strong partnership with the University of Maryland School of Medicine drives excellence in patient care at UMMC and across the University of Maryland Medical System, with examples throughout this annual report.

Mangla Gulati, MBBS, assistant professor of medicine at the UMSOM, is UMMC's chief quality officer, associate chief medical officer and vice president for patient safety and clinical effectiveness. UMMC provides care to a patient population that is among the highest acuity of any hospital in the country.



For each unit in the hospital, a "dyad" made up of a faculty physician medical director and a nurse manager collaborate to continually improve patient outcomes. Through this dyad model, the staff aspires to status as a high-reliability organization.

As part of this focus on quality, UMMC accelerated its efforts in 2018 to better align operations across the downtown and midtown campuses. Capitalizing on the strengths of each campus, the staff forged ahead with initiatives designed to give patients a seamless experience between the facilities and to deliver care more efficiently. The "One Hospital, Two Campuses" goal is coming to fruition as teams in both locations work together to move toward a single patient-centered, integrated model. A shuttle conveniently runs between both campuses. A new Patient Access Center opened this summer to align Maryland ExpressCare and patient placement to improve patient access and flow.

UMMC has headquartered some of its marquee clinical and research programs — such as diabetes and endocrinology, pulmonology, ophthalmology and infectious disease — at the midtown campus, which also houses excellent surgical facilities and a new patient care tower under construction. Both campuses serve Baltimore residents for primary health care needs in addition to UMMC's role as a regional referral center for specialty care.

Pioneers in Critical Care

More than 11 specialized critical care units in UMMC exemplify the hospital's role as a major referral center for the region. UMMC's faculty physicians, nurses and other staff excel in time-sensitive critical care, developing innovative models for caring for patients with traumatic injury, sepsis, respiratory distress, stroke, cardiovascular disease and other critical illness.

The Thoracic Intermediate Care Unit is the region's first and only fully integrated unit dedicated solely to the care of general thoracic surgical patients. The team includes physicians, nurses and respiratory therapists who specialize in thoracic surgical patients. **Joseph Friedberg, MD**, the Charles Reid Edwards, MD, Professor in Surgery at the UMSOM and head of the Division of Thoracic Surgery at UMMC, is the medical director.



Dr. Friedberg has pioneered a "lung-sparing" surgical procedure for patients with mesothelioma, removing the cancer but saving the lung, which has improved survival.

An innovative study by UMSOM faculty published in the *Journal of the American College of Cardiology* examined the addition of intensivists working with cardiologists for patients receiving mechanical breathing assistance in the Cardiac Intensive Care Unit.

"When we looked at the clinical results of our intervention, we were removing the breathing tube faster, and getting patients out of the Cardiac ICU about two days earlier than previously," says study senior author **Michael T. McCurdy, MD, FCCM, FCCP, FAAEM**, associate professor of pulmonary and critical care medicine at the UMSOM.



A Team Approach

Anesthesiologists care for patients in many of UMMC's intensive care units. In the Surgical Intensive Care Unit, **Megan Graybill Anders, MD, MS**, assistant professor at the UMSOM and associate chair for safety and quality in the Department of Anesthesiology, discusses a patient's case with **Sabrina Ngo, MD**, resident physician in anesthesiology, and **Caroline Brown, BSN, RN, CCRN**, a nurse in the Surgical ICU.

Meeting Primary and Specialty Care Needs

In addition to serving as a critical care and specialty care referral center for hospitals across the region, UMMC also is committed to serving Baltimore city residents for all of their health care needs.

UMMC includes a second campus in midtown Baltimore with more than 120 beds and a diverse array of inpatient and outpatient services, including headquarters for programs such as the nationally ranked **UM Center for Diabetes and Endocrinology**, the **UM Center for Infectious Diseases** and other chronic disease management programs staffed by UMSOM faculty. The midtown campus is the main destination for UMMC services in pulmonology, nephrology, psychiatric care, sleep medicine, vascular disease and ALS (Lou Gehrig's disease) care and research.

Community Health

Both UMMC campuses address community health concerns, ensuring access to care serving all Marylanders. Primary care and community health workers play an increasingly important role in meeting the community's need for **outpatient care, education and prevention**. As a result, residents can become healthier and less likely to need to be admitted to a hospital.

Alison Brown, MPH, president of UMMC's midtown campus, with Wanda Walker Hodges, MS, CRNA, director of nursing, perioperative and surgical services, and Tedric Henneghan, MD, assistant professor of anesthesiology at the UMSOM and chief of the midtown anesthesiology division.



Environmental Stewardship

UMMC expands the concept of care to the environment that patients and community members live in. The US Department of Energy recently recognized UMMC as among the top seven health care institutions in the country with the greatest energy savings.

UMMC has reduced its energy usage by 12 percent since 2012, generating monetary savings as well as creating best practices that hospitals nationwide can use as models for reducing their own energy usage.



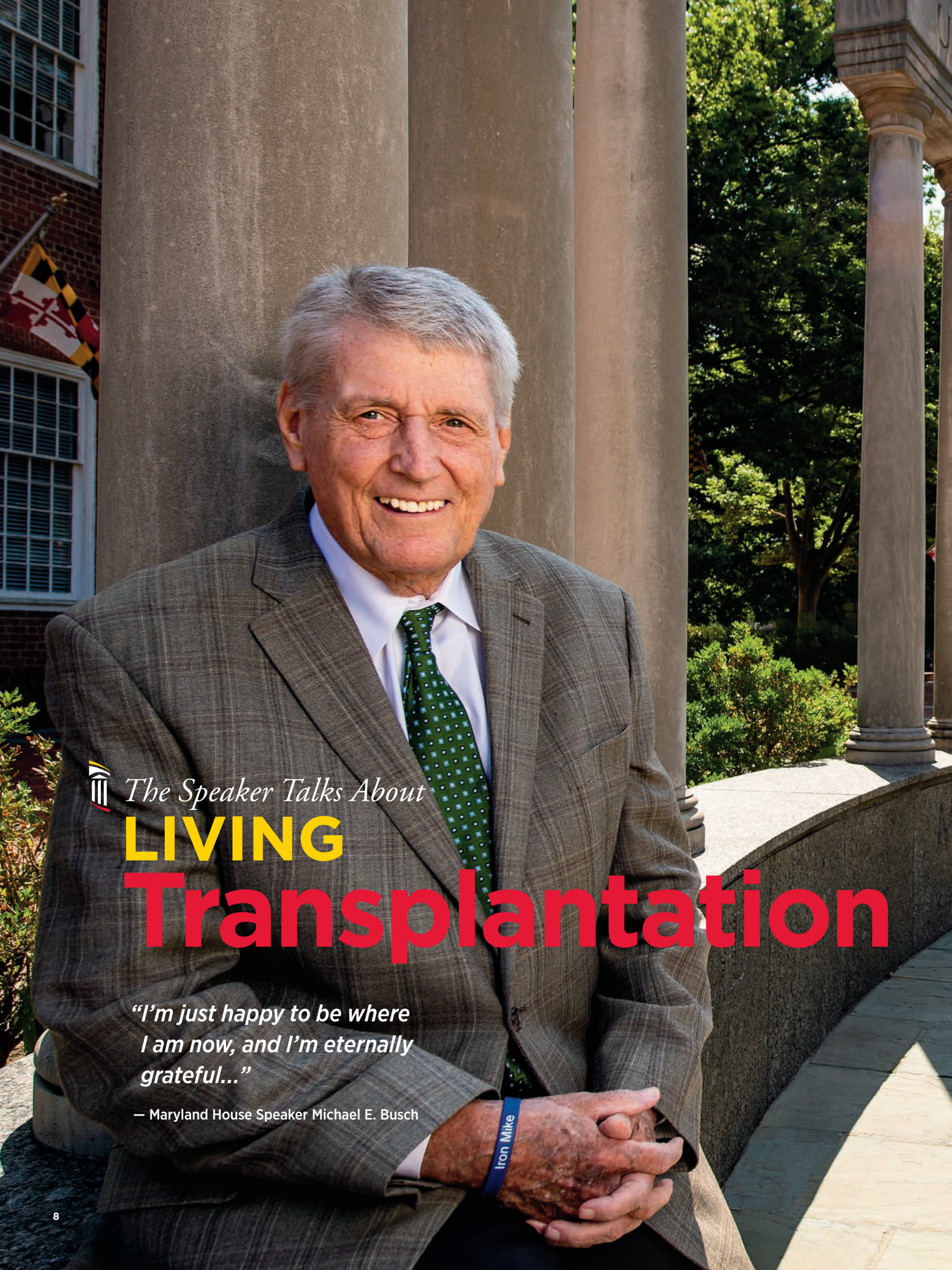
West Baltimore Partnership

UMMC has an ongoing presence and partnership in West Baltimore schools and neighborhoods in collaboration with the University of Maryland, Baltimore (UMB).

UMB is a graduate and professional university that includes the UMSOM, in addition to the schools of nursing, pharmacy, dentistry, social work and law.

"We continue to dedicate energy, effort and resources to fulfill our role as an anchor institution in Baltimore. We are redoubling our efforts in community health improvement, workforce development and opportunities for UMMC staff to engage as volunteers beyond our walls," says Mohan Suntha, MD, MBA, UMMC's president and CEO.





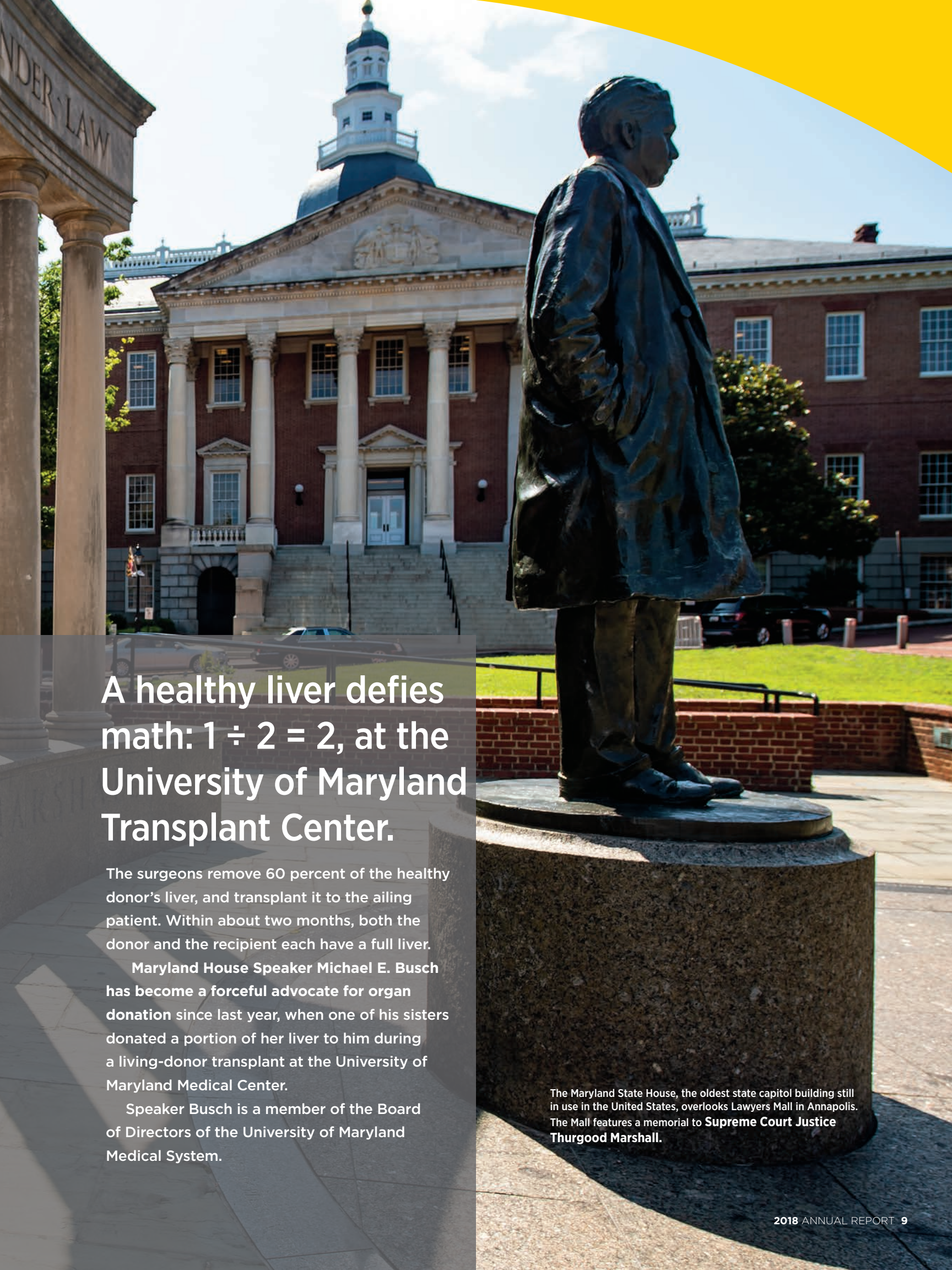
The Speaker Talks About

LIVING

Transplantation

*“I’m just happy to be where
I am now, and I’m eternally
grateful...”*

— Maryland House Speaker Michael E. Busch



A healthy liver defies math: $1 \div 2 = 2$, at the University of Maryland Transplant Center.

The surgeons remove 60 percent of the healthy donor's liver, and transplant it to the ailing patient. Within about two months, both the donor and the recipient each have a full liver.

Maryland House Speaker Michael E. Busch has become a forceful advocate for organ donation since last year, when one of his sisters donated a portion of her liver to him during a living-donor transplant at the University of Maryland Medical Center.

Speaker Busch is a member of the Board of Directors of the University of Maryland Medical System.

The Maryland State House, the oldest state capitol building still in use in the United States, overlooks Lawyers Mall in Annapolis. The Mall features a memorial to **Supreme Court Justice Thurgood Marshall**.

Living Transplantation

Speaker Advocates for Patients and Donors

At 71, Michael E. Busch is an enduring and much-loved figure in Maryland government — **the longest-serving Speaker of the House in the history of the Maryland General Assembly** — as well as a member of the University of Maryland Medical System Board of Directors.

He played football as an undergraduate at Temple University, and still exudes the kind of athleticism that has led his fellow delegates to affectionately nickname him “Coach.” Two years ago, his health began to decline. In May 2017, doctors diagnosed him with nonalcoholic steatohepatitis and told him he would need a liver transplant. All three of his sisters offered to be donors: UMMC transplant physicians and laboratory scientists determined that his middle sister, Kathleen “Laurie” Bernhardt, was the best match.

Speaker Busch and Mrs. Bernhardt were interviewed in the local media, pitching themselves as poster children for the benefits of the **University of Maryland’s living donor program, the second-largest one in the country.** “*What we want you to do is advertise that donation is a good thing,*” she told a reporter. “*The liver does regenerate itself, and people can donate and still — after recuperation — remain healthy and retain their active lifestyles.*”

“*I’m just happy to be where I am now, and I’m eternally grateful that my sisters stepped up to the plate,*” Speaker Busch said. “*I was going to do everything I could to live. I have a wife and two daughters.*”

Since recovering from his transplant, Speaker Busch has been working in his legislative role to improve transplant care and make it easier for living donors to donate a kidney or part of a liver without incurring economic hardship.

Legislation Passed to Improve Transplant Care

On February 6, 2018, Speaker Busch led a salute to the UMMC transplant team during a session of the Maryland House of Delegates.

On that same day, hearings were held for two **transplant-related bills that Speaker Busch sponsored, one giving a tax break for living transplant donors, and**



Speaker of the House Michael Busch welcomed UM Medicine leaders and surgeons to the Maryland State House to support legislation to improve transplant care.



Speaker Busch with Dr. Barth, who performed his liver transplant

another authorizing organ-delivery vehicles to use lights and sirens when transporting human organs or medical personnel. After the bills passed the House and Senate, Maryland Governor Larry Hogan signed them into law.

University of Maryland School of Medicine faculty members **Rolf Barth, MD, and Stephen Bartlett, MD,** testified on the transplant bills.

Dr. Barth is associate professor of surgery and head of the Division of Transplantation at UMMC.

Dr. Bartlett is the Peter Angelos Distinguished Professor in Surgery and executive vice president and chief medical officer at UMMS, and director of the Comprehensive Program in Transplantation at the UMSOM.

First in the Nation to Solve the Shortage of Donated Organs

Across the United States, more than 120,000 people are on waiting lists for organ transplants. Every year, thousands of patients nationwide die while waiting for an organ. To help solve this problem, scientists have been developing ways to transplant organs from animals to humans, a technique known as xenotransplantation.

Muhammad Mohiuddin, MD, professor of surgery and director of the Cardiac Xenotransplantation Program at the UMSOM, the first of its kind in the nation, has spent years studying how to transplant pig hearts into other species, with the goal of determining whether such a transplant could save the life of a human patient in the future.





The Transplant Center's waiting room on the first floor of 16 S. Eutaw Street



New Transplant Center Consolidates Services at One Downtown Location

This year, the surgical and medical disciplines that serve transplant patients at UMMC consolidated all services into one location at the downtown campus. **The new center on Eutaw Street serves patients with liver, kidney, pancreas, lung and heart transplants.** The center provides a better experience for patients and brings the surgeons in all those specialties together for greater collaboration. Patients can see all of their care team in one location.

The expertise and capacity of the program attract growing numbers of out-of-state patients, many of whom make use of **electronic "e-Visits" for evaluation and follow-up.**

Increasing Access Across the Region

While all transplant surgeries are performed at UMMC because of the complexity of the surgery and immediate recovery period, the **UM Transplant Center provides pre-transplant and follow-up services in several locations for easier access** for patients throughout the region, including at:

UNIVERSITY OF MARYLAND SHORE MEDICAL CENTER AT EASTON, for pre-transplant care for patients awaiting kidney transplant.

UNIVERSITY OF MARYLAND UPPER CHESAPEAKE MEDICAL CENTER in Bel Air, for evaluation for kidney transplant and pancreas transplant.

UNIVERSITY OF MARYLAND CHARLES REGIONAL MEDICAL CENTER in La Plata, for evaluation for kidney transplant and pancreas transplant.

Life on MARS as a Bridge to Transplant

Excellent critical care is a foundation of success in transplant, and UMMC is a leader and pioneer in critical care medicine. Surgeons **Thomas Scalea, MD**, and **Deborah Stein, MD**, lead a critical care and surgical team effort to help more patients with liver failure to survive until an organ is available for transplant.

Between 2013 and 2016, the team used the Molecular Adsorbent Recirculating System (**MARS**) machine in **27 patients facing death from liver failure. The majority lived.** The machine is FDA-approved to remove blood toxins that are normally removed by the liver. The UMMC teams also used the device off-label as a bridge to transplant, keeping several people alive until an organ became available.

Dr. Scalea is the Francis X. Kelly Distinguished Professor in Trauma Surgery at the UMSOM and physician-in-chief of the R Adams Cowley Shock Trauma Center at UMMC, and system chief for critical care services at UMMC.

Dr. Stein is the R Adams Cowley, MD, Professor in Shock and Trauma at the UMSOM and chief of trauma at UMMC.



Research to Improve the Decision-Making on Available Organs

With transplantable lungs in short supply, who needs a transplant now, and who can wait? **Robert Reed, MD**, and colleagues **published research in the journal *Chest*** questioning whether the current lung transplant selection process for patients with chronic obstructive pulmonary disease is the most accurate way to determine transplant eligibility.

Dr. Reed is an associate professor of medicine at the UMSOM and medical director of lung transplantation for the US Veterans Administration Southeast Region, as well as a pulmonary and critical care specialist at UMMC.

KIDS WITH Lots of Heart

Syah Weddington was born at the University of Maryland Medical Center in January, but physicians at the Center for Advanced Fetal Care started treating her much earlier.




Briana Seimah was in her 20th week of pregnancy when her doctors discovered via advanced ultrasound that her unborn baby had two congenital heart defects: double outlet right ventricle and coarctation of the aorta.

Shifa Turan, MD, associate professor of obstetrics, gynecology and reproductive sciences at the UMSOM and director of the Fetal Heart Program at UMMC, diagnosed Syah and developed

a plan to help speed up lung development in preparation for early delivery and subsequent heart surgery.

Born at 32 weeks and 4 days and weighing just over 6 pounds, baby Syah remained in the Drs. Rouben and Violet Jiji Neonatal Intensive Care Unit of the University of Maryland Children's Hospital. Her care team included UMSOM faculty Carissa Baker-Smith, MD, MS, MPH, assistant professor of pediatrics, and Sunjay Kaushal, MD, PhD, professor of surgery.

Syah had her first surgery when she was 6 weeks old. Doctors printed a 3-D model of her heart to visualize her unusual anatomy to plan her second surgery, a Glenn shunt procedure, when she was 3 months old. When she turns 3, she will have her third surgery, a Fontan procedure, which should carry her through the rest of her life. In the meantime, Syah's parents bring her for a monthly check-up with Dr. Baker-Smith.

A close-up photograph of a woman with colorful dreadlocks (green, yellow, and orange) looking down at a baby she is holding. The baby is wearing a blue and yellow plaid shirt and a black headband. The woman is wearing a white t-shirt with a colorful graphic of an ice cream cone. The background is a soft, out-of-focus green and blue.

“She reaches and grabs for objects, she has four teeth, and is always babbling and laughing.”

— Briana Seimah, Syah’s mother

UMCH ranks as a
**“BEST CHILDREN’S
HOSPITAL”**
by *U.S. News and
World Report*,
for pediatric
cardiology &
heart surgery.

UM Children's Hospital

Top-Ranked in Pediatric Cardiology and Cardiac Surgery

The Children's Heart Program at the University of Maryland Children's Hospital (UMCH) was ranked for the first time this year among the **nation's top 50 pediatric cardiology and heart surgery centers, according to the 2018-2019 edition of U.S. News & World Report Best Children's Hospitals.**

"The Children's Heart Program is something special," said Steven J. Czinn, MD, the Drs. Rouben and Violet Jiji Professor in Pediatrics, chair of the Department of Pediatrics at the UMSOM and director of UMCH. "Receiving a national ranking from U.S. News & World Report solidifies what we've known for years — that our team provides the very best care for children with heart conditions. The recognition helps spread the word that we can help children with heart conditions in Maryland and around the nation."

Geoffrey L. Rosenthal, MD, PhD, professor of pediatrics at the UMSOM and director of the Pediatric and Congenital Heart Program at UMCH, said, *"Most children's heart programs are not ranked at all. This ranking demonstrates excellence across the entire University of Maryland team caring for children with serious and life-threatening illnesses. The process is rigorous, looking at how well we score on a number of quality measures, and checking our participation in efforts to make care even better."*



"For patients and their families, the ranking is a stamp of quality that we are among the very best programs in the world."

- Dr. Rosenthal

Clinical Trial for Stem-Cell Therapy

Infants born with a rare heart defect called hypoplastic left heart syndrome (HLHS), for unknown reasons, have an underdeveloped or missing left ventricle, which is the heart's main pumping chamber. This defect causes the right ventricle to take on the extra workload and pump harder. Infants need heart surgery right after they are born and at least two more times as toddlers.

Sunjay Kaushal, MD, PhD, professor of surgery at the UMSOM and director of pediatric and adult congenital surgery at UMMC, **is currently leading research on pediatric patients with HLHS to determine whether stem cells injected into the infants' hearts during the corrective surgeries will strengthen their hearts, delaying the need for a heart transplant.**

Dr. Kaushal and Dr. Rosenthal are co-directors of the Children's Heart Program at UMCH.

Maryland First Lady Yumi Hogan Creates Art Therapy Foundation

The Yumi CARES Foundation, an independent 501c3 organization established by **Maryland First Lady Yumi Hogan**, **launched its first art therapy program** at the University of Maryland Children's Hospital.

The unique program brings free art therapy services to all pediatric patients and their families. **The program is the first of its kind in Maryland**, and represents Mrs. Hogan's passion for helping children in the hospital heal through art. The "CARES" in the foundation's name stands for **Children's Art for Recovery, Empowerment and Strength.**

Art therapy helps young patients facilitate emotional and physical healing and strength with the guidance of a professional art therapist.



First Lady Yumi Hogan with UMCH patient Josh Birch, 13





Chris and Jill Davis and their UMCH friends



Dr. Abzug started Camp Open Arms in 2014.



Photos courtesy of the Baltimore Orioles

Chris and Jill Davis Serve as Ambassadors for UMCH

Baltimore Orioles first baseman Chris “Crush” Davis and his wife, Jill, hosted a charity home-run derby at Camden Yards last spring, with **proceeds benefitting the Children’s Heart Program at the University of Maryland Children’s Hospital**. The “Crush’s Homers for Hearts” in 2017 raised nearly \$100,000. Chris Davis pledged a personal donation of \$1,000 for each home run he made during the 2017 season, totaling \$26,000.

Chris and Jill Davis serve as ambassadors for UMCH, helping to raise awareness for childhood illnesses and UMCH’s role as a leader in patient care, pediatric disease research, and teaching future generations of health care providers. In support of the partnership, the Davis family has also visited patients at UMCH and donated toys, promotional items and supplies to the Drs. Rouben and Violet Jiji Neonatal Intensive Care Unit.

Camp Open Arms

Joshua Abzug, MD, associate professor of orthopaedics at the UMSOM and deputy surgeon-in-chief of UMCH, hosts **Camp Open Arms** each year for children with limb differences. For one week, children come to the day camp to go on a nature hike, create arts and crafts, throw water-balloons and visit with zoo animals, firefighters and local entertainers. This camp provides the children and their families an opportunity to come together and grow. The program is made possible through generous donations and volunteers. Deputies in the Cecil County Sheriff’s Office raised more than \$17,000 in November 2017 to help support the camp, which took place in August this year.



Andrew Hoxie, a forward for the Baltimore Blast, autographed soccer balls for campers.

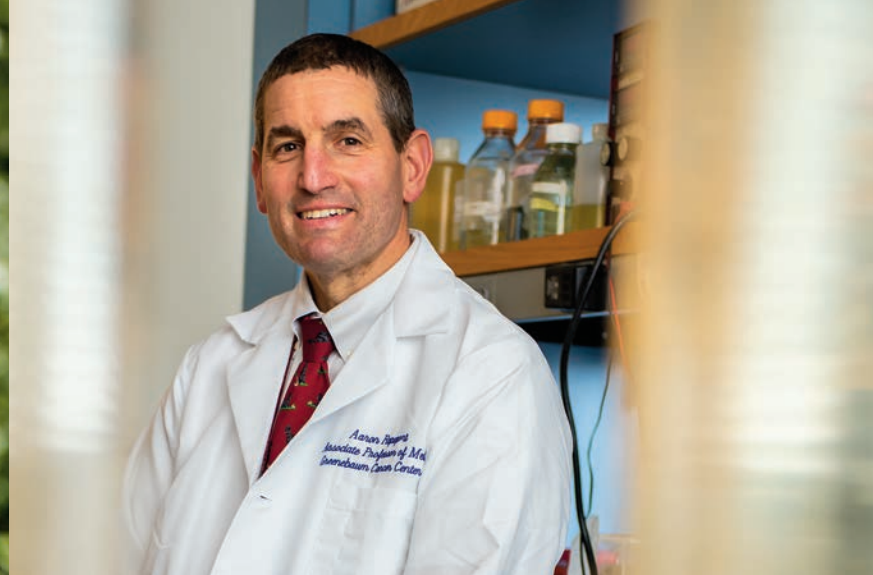




Harnessing the Power

TO BEAT Cancer

Sue Marcheski and her husband, John, were delighted to attend the opening of UM Medicine's Fannie Angelos Cellular Therapeutics Laboratory.



More than 18 years ago, Mrs. Marcheski was diagnosed with leukemia and successfully treated as part of a clinical trial led by Aaron Rapoport, MD, the Gary Jobson Professor in Medical Oncology at the UMSOM.

The newly dedicated Fannie Angelos Cellular Therapeutics Laboratory allows physician-scientists to produce cells that help a patient's own immune system attack and eliminate cancer.



★ W

*“Every day is a blessing.
And to Dr. Rapoport,
words are not enough.”*

— Sue Marcheski

Learn more at umms.org/marcheski

Beating Cancer

A Gift to Engineer New Cures

The Fannie Angelos Cellular Therapeutics Laboratory will allow scientists to create the next generation of cancer cures — cells that help a patient's immune system attack and eliminate cancer. The laboratory will also be used to study and develop ways to engineer cells for a wide variety of other illnesses, including diabetes and heart disease.

The laboratory — part of the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC) — was made possible by a \$1 million gift from Baltimore lawyer and Orioles owner Peter G. Angelos, as well as donations from other benefactors. The lab is named in memory of Angelos's sister, who died in 2015 of complications from a bone marrow disorder.

Governor Larry Hogan Gives Governor's Citation

At the laboratory ribbon-cutting, Maryland Governor Larry Hogan presented Dr. Rapoport with a governor's citation for his hard work in making The Fannie Angelos Cellular Therapeutics Laboratory a reality and "for his incredible efforts using immunotherapy to save the lives of countless patients, including my own life," said Governor Hogan.

Dr. Rapoport with Governor Hogan

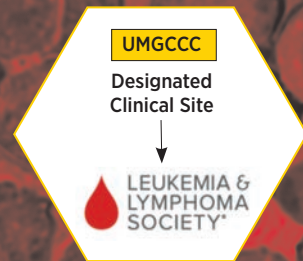


The Beat AML Master Trial

Going on the Offensive Against Acute Myeloid Leukemia

UMGCCC is one of 12 cancer centers nationwide participating in a trial using genetic testing for acute myeloid leukemia (AML) patients. AML affects 20,000 Americans annually and is the most lethal of the blood cancers, responsible for more than 10,000 deaths a year.

"This personalized therapy approach, employing genetic testing to help determine treatment, gives us a potentially powerful tool to fight this often deadly blood cancer," said Maria R. Baer, MD, professor of medicine at the UMSOM, director of hematologic malignancies and co-leader of the experimental therapeutics program and the principal investigator for the study at UMGCCC.



CAR T-Cell Therapy Now Offered at UMGCCC

UMGCCC is now certified to treat patients with a groundbreaking therapy for non-Hodgkin lymphoma.

"Having the ability to re-program a patient's immune cells to attack their cancer is a powerful new tool, which will help many patients who have few treatment options," said Dr. Rapoport.

The customized therapy involves removing immune cells, or T cells, from the patient and shipping them to a laboratory, where they are genetically modified. The cells are infused back into the patient, where they increase rapidly and seek out and destroy lymphoma cells.

New Invention FDA-Approved

GammaPod Reduces Radiation Therapy Risk

GammaPod, a new technology for delivering radiation to breast cancer with minimal damage to healthy tissue, is the brainchild of two UMSOM professors, and UMGCCC will be the **first cancer center in the world** to use it for treating patients. The **first-of-its-kind stereotactic radiotherapy** system was invented by **William F. Regine, MD, FACR, FACRO**, the Isadore and Fannie Schneider Foxman Chair in Radiation Oncology and chief of radiation oncology at UMGCCC, and **Cedric X. Yu, DSc, FAAPM**, the Carl M. Mansfield, MD, Professor in Radiation Oncology.

The FDA granted the device 510(k) clearance in December 2017, paving the way for the manufacturer to market the device. The **first patient** could be treated by the end of 2018.

"We believe this novel radiotherapy system has the potential to change the paradigm for treating early-stage tumors, negating the need for surgery for some patients," said Dr. Regine.



University of Maryland Cancer Network

The University of Maryland Cancer Network coordinates cancer care and research activities among cancer centers within the University of Maryland Medical System, including UMGCCC, as well as affiliated community cancer centers at UM St. Joseph Medical Center, UM Upper Chesapeake Health, and UM Baltimore Washington Medical Center.

The network also works closely with cancer programs at UM Shore Regional Health, UM Capital Region Health and UM Charles Regional Medical Center.



In Memoriam

Stewart Greenebaum

Stewart Greenebaum, a longtime benefactor of University of Maryland Medicine, died December 10, 2017, after a long illness.

Mr. Greenebaum dedicated much of his philanthropic work to supporting cancer research, treatment and education. He and his wife, Marlene, gave the founding gift for the UM Marlene and Stewart Greenebaum Comprehensive Cancer Center in 1995. For the Greenebaums, the gift also had a very personal meaning — it was given to celebrate Mrs. Greenebaum's successful treatment and recovery from breast cancer.



"Mr. Greenebaum was a remarkable human being and a great friend of cancer patients everywhere."

— Kevin J. Cullen, MD
UMGCCC Director and the Marlene and Stewart Greenebaum Distinguished Professor in Oncology at the UMSOM

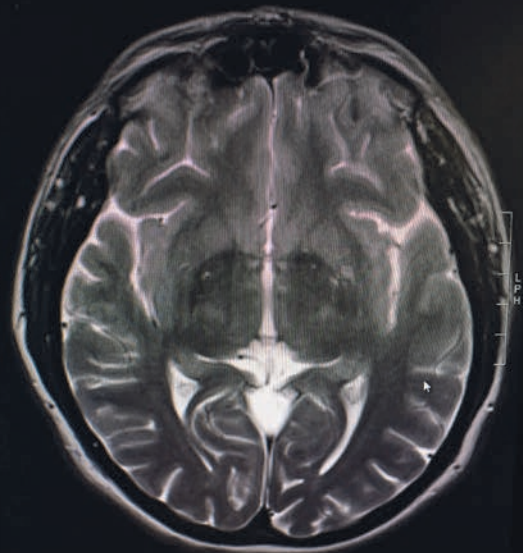





*A Powerhouse of Expertise
in Brain Science and*

MENTAL Health

Researchers and physicians collaborate
in translational brain science at
the University of Maryland School
of Medicine.





Tracy Bale, PhD, professor of pharmacology at the UMSOM and director of the new Center for Epigenetic Research in Child Health and Brain Development, has focused much of her research on the links between stress and subsequent risk for neurodevelopmental disorders, including autism and schizophrenia in offspring.

Her work on the placenta has found differences between males and females that may predict increased prenatal risk for disease in males. She has found that in mice, a father's stress can affect the brain development of offspring, and that the vaginal microbiome may play a role in transferring stress from mothers to their infants.

The Center's offices and laboratories are housed in the new UMSOM research facility.

"I am excited about launching our new Center for Epigenetic Research in Child Health and Brain Development."

— Dr. Bale

Brain Science and Mental Health

The Maryland Psychiatric Research Center

Unraveling the Puzzle of How the Brain May Go Awry in Schizophrenia

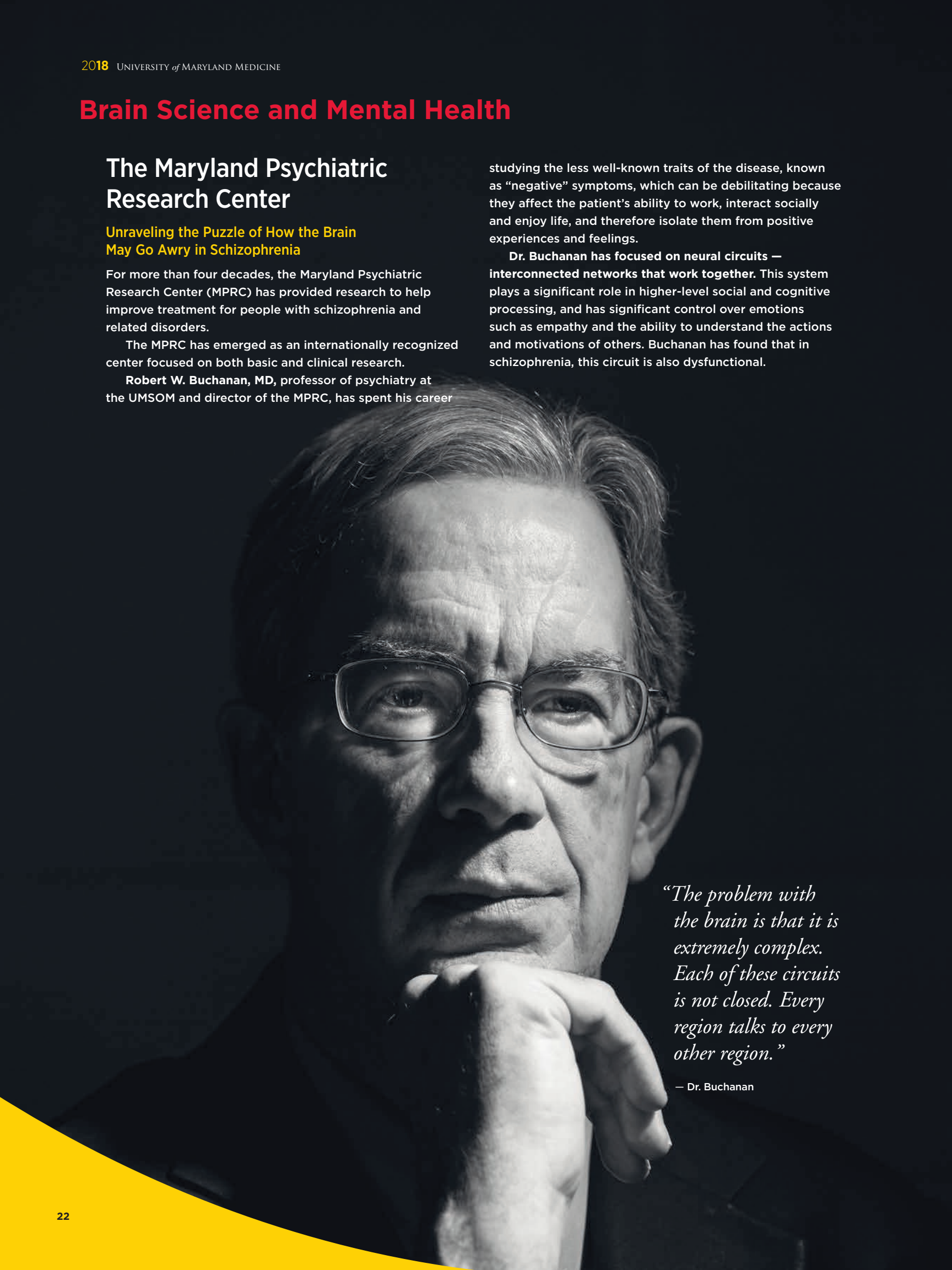
For more than four decades, the Maryland Psychiatric Research Center (MPRC) has provided research to help improve treatment for people with schizophrenia and related disorders.

The MPRC has emerged as an internationally recognized center focused on both basic and clinical research.

Robert W. Buchanan, MD, professor of psychiatry at the UMSOM and director of the MPRC, has spent his career

studying the less well-known traits of the disease, known as “negative” symptoms, which can be debilitating because they affect the patient’s ability to work, interact socially and enjoy life, and therefore isolate them from positive experiences and feelings.

Dr. Buchanan has focused on neural circuits — interconnected networks that work together. This system plays a significant role in higher-level social and cognitive processing, and has significant control over emotions such as empathy and the ability to understand the actions and motivations of others. Buchanan has found that in schizophrenia, this circuit is also dysfunctional.



“The problem with the brain is that it is extremely complex. Each of these circuits is not closed. Every region talks to every other region.”

— Dr. Buchanan

Quickly Reversing Depression

Current antidepressants are effective in only half of patients. When they do help, they typically take between three and eight weeks to take effect. For years, scientists and doctors have known about another compound that can treat depression within hours. However, the drug ketamine can cause hallucinations, which limits its use in depression.

Scott Thompson, PhD, professor and chair of the Department of Physiology at the UMSOM, and his colleagues have identified a ketamine metabolite that quickly reverses depression, without side effects. He and his colleagues are now testing the chemical, hydroxynorketamine, in humans.

Mary Kay Lobo, PhD, assistant professor of anatomy and neurobiology at the UMSOM, conducts research to examine mechanisms occurring in specific neurons in the brain as a result of cocaine abuse. This research will determine the neural circuit and molecular signaling mechanisms that underlie these alterations and further probe these mechanisms using animal models of addiction.

Ultimately, this research can uncover novel molecular mechanisms and potentially lead to new therapeutic targeting for effective treatment of addiction, depression and stereotypy disorders.

A Multi-Modal Approach to the Opioid Epidemic

Drug overdose is the leading cause of accidental death in the United States, and Maryland has one of the highest rates of opioid drug overdose deaths in the country.

After an Overdose, Seizing the Opportunity to Offer Treatment

In the immediate wake of an overdose visit to the emergency room, the patient who survives may be particularly motivated to seek treatment. At UMMC's downtown and midtown campuses, the Emergency Department (ED) staff has been making sure that patients who end up in the ED have a path to substance-abuse treatment if they want it.

The Maryland Screening, Brief Intervention, Referral to Treatment Program (SBIRT) is an evidence-based, cost-effective, public health approach to early intervention and treatment. The ED staff screen patients to assess the severity of drug or alcohol use, then offer education about the risks of abuse, as well as options for treatment.

Opioid Task Force Collaborates with City Hospitals

The UMMC Opioid Stewardship Task Force develops and unifies clinical initiatives to tackle opioid use disorder and overdose epidemics. The task force is chaired by **Janine Good, MD**, associate professor of neurology and chief medical officer at UMMC's midtown campus. Dr. Good and her panel work with Baltimore city officials and counterparts from other hospitals to adopt multi-modal approaches to pain that reduce or eliminate the need for prescribing opioids.



Dr. Good

Using Telemedicine to Treat Addiction in Rural Communities

A recent nationwide survey found that nearly half of adults who live in rural communities have been directly affected by opioid addiction. These communities often have a severe shortage of doctors and clinics willing and able to provide addiction treatment.

University of Maryland School of Medicine psychiatrists are now using telemedicine — live videoconferencing — to provide addiction treatment to patients throughout rural Maryland.

The program is led by **Eric Weintraub, MD**, and **Christopher Welsh, MD**, both associate professors in the Department of Psychiatry. The project has treated more than 400 patients at four sites, and the data indicate that it is effective. Researchers are working to expand to other states with rampant addiction in rural areas.

Dr. Welsh and Dr. Weintraub





Cardiovascular Care

PHYSICIAN
Innovators



James Gammie, MD, professor of surgery at the University of Maryland School of Medicine and head of cardiac surgery at the University of Maryland Medical Center, invented a surgical device to reduce the invasiveness and side effects of mitral valve surgery.

The harpoon-like device is already being marketed to surgeons and hospitals in Europe after a clinical trial there found it to be safe and effective. Plans are underway for a clinical trial in the United States, now that the Baltimore-based company developing the device, Harpoon Medical, was acquired by Edwards Lifesciences Corp.

“We think that it will encourage earlier referral to intervention before patients develop A-fib and MR ventricular dysfunction. It will also address the high-risk patient population who otherwise wouldn’t be referred for intervention,” said Dr. Gammie.

“For physicians, we believe this is going to demystify mitral valve repair.”

— Dr. Gammie

Innovation in Cardiovascular Surgery and Medicine

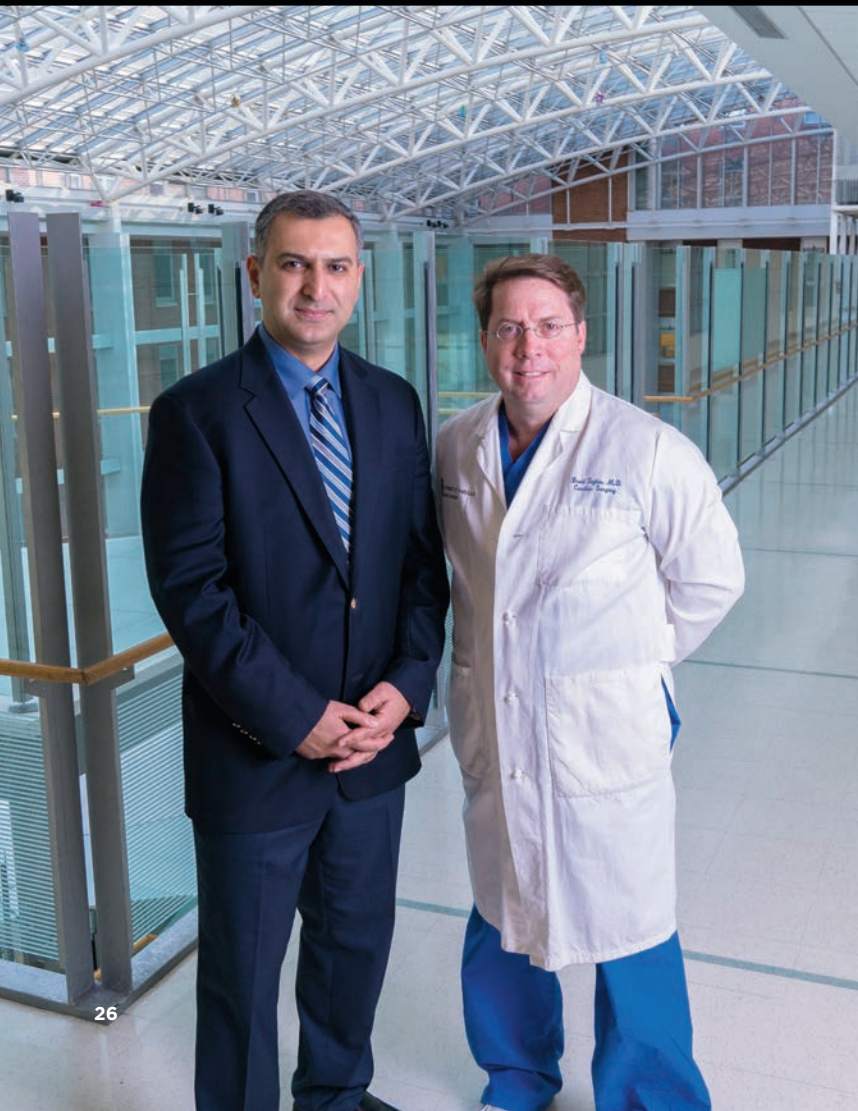
The fruits of research at many levels pushed UM Medicine cardiologists and cardiac and vascular surgeons to the forefront of efforts to improve the lives of adults and children with heart disease.

Early Access to New Treatments for Aortic Disease

At the UM Center for Aortic Disease, the vast experience of the surgeons led to their selection as investigators for the **first thoracic aortic endograft available in the United States. The procedure seals off lesions in a neighboring artery.** They will also conduct another trial for a device with four side branches for arteries that supply the abdominal organs.

The co-directors of the center are UMSOM faculty **Shahab Toursavadkahi, MD**, assistant professor of surgery, and **Bradley Taylor, MD, MPH**, associate professor of surgery. Dr. Taylor supplies expertise on organ perfusion and the heart, and Dr. Toursavadkahi's subspecialty is endovascular reconstruction and minimally invasive surgery.

Dr. Toursavadkahi and Dr. Taylor



A New Class of Heart Valve Equates to a Better Quality of Life for Patients

For years, surgeons and patients have faced a dilemma: select a mechanical heart valve that lasts a lifetime, but requires daily blood thinners, or select a tissue valve that might need to be replaced in about seven years.

The University of Maryland Heart and Vascular Center was among **the first in the world to implant a new class of aortic tissue valve that could last two to three times longer than currently available tissue valves.** The surgical team was led by **Bartley Griffith, MD**, the Thomas E. and Alice Marie Hales Distinguished Professor at the UMSOM.



The patient, Matt Marino, after his initial diagnosis, discussed treatment options with his cardiologist, **Libin Wang, MD**, associate professor of medicine at the UMSOM, who recommended the new valve surgery. Mr. Marino became the **first patient in Maryland and one of the first people in the United States to receive this new generation of replacement aortic valve** that does not require him to take blood thinners for the rest of his life. They implanted the valve on January 17, 2018.



Matt Marino, 41, and his sons enjoy a day at the park.

“First I met with Dr. Wang, and he recommended the surgery. So I’m thankful to him for putting me into Dr. Griffith’s hands. I believe in medicine. I believe in Dr. Griffith, and I trusted him all the way.”

— Matt Marino

Learn more and watch footage of the operation at physicians.umm.edu/resiliavalve



Dr. Baker-Smith

Pediatric Cardiology

International Guideline on Pediatric Hypertension

A UM Medicine pediatric cardiologist authored a clinical practice guideline released in August 2017 by the American Academy of Pediatrics.

Carissa Baker-Smith, MD, MS, MPH, FAAP, FAHA, assistant professor of pediatrics at the UMSOM and a pediatric cardiologist at the University of Maryland Children's Hospital, is a lead author of *Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents*, the first update in 13 years on this topic. The guideline provides **evidence-based recommendations on diagnosis and treatment of high blood pressure in children, and is endorsed by the American Heart Association and by the American College of Cardiology.**

Basic Science Research

Potassium Pathway's Impact on Hypertension

Paul Welling, MD, professor of physiology at the UMSOM, and his collaborators from around the world were awarded a prestigious Transatlantic Network of Excellence grant from the Foundation LeDucq to study why blood pressure is so sensitive to dietary potassium. The mechanisms underlying the effects of potassium on hypertension remained obscure until Dr. Welling and his collaborators helped define a pathway, which they call the renal-potassium switch.

Their research indicates that low potassium consumption, common in modern diets, causes the body to conserve potassium, which leads to increased sodium retention and higher blood pressure.

Boyoung Kim, research supervisor, and Dr. Welling



Growth in Heart Surgery

For two years in a row, UM Medicine cardiac surgeons and cardiologists cared for more heart surgery patients than any program in the state.

Surgical cases increased by 25 percent in 2018, because of a number of factors: recruitment of surgeons, access to new heart valves before they are offered in other hospitals (because of UM surgeons' expertise), specialized programs for heart and lung support, and a strategic approach toward better patient flow, efficient practices and streamlined protocols.

"Key to our growth this year is the effort we have made to step back and look at all of our practices to see how to be able to care for all of the patients who need us," said **James Gammie, MD**, professor of surgery at the UMSOM and head of cardiac surgery at UMMC.

The **UM Heart Network** continues to expand to Maryland residents beyond the downtown Baltimore campus of UMMC, with stellar heart surgery programs in Towson and in Cheverly that include faculty surgeons from the UMSOM. Both **UM St. Joseph Medical Center (UM SJMC)** and **UM Prince George's Hospital Center (UM PGHC)** earned ratings from the Society for Thoracic Surgeons. The ratings demonstrate patient outcomes that, overall, place these programs among the top 10 percent in the country.

Stewart Finney Jr., MD, clinical associate professor of surgery at the UMSOM, is chief of cardiac surgery at UM SJMC. **Jamie Brown, MD**, associate professor of surgery at the UMSOM, is director of cardiac surgery at UM PGHC, which is part of **UM Capital Region Health.**

The UM Heart Network is bringing the most advanced options and research to more patients than ever before.





Together, We Are

FIGHTING Infectious Disease

Here in Maryland, and around the world, some of the best minds in medicine are tackling the most ferocious of foes — infectious diseases.

The Center for Infectious Diseases is headquartered at the University of Maryland Medical Center's midtown campus. **Christopher Roberson, CRNP**, is among the many physicians, nurse practitioners, nurses and other staff who are providing lifelong HIV care, managing all types of viral hepatitis, and investigating better flu vaccines and even an experimental HIV vaccine.

The center's scientists in global programs are trying to eradicate malaria in Africa and Southeast Asia, and are working on vaccines for myriad other diseases.





UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

Christopher Robinson, M.S., CRNP, ACRN
Infectious Diseases

Conquering Pathogens

Center for Infectious Diseases

The UM Center for Infectious Diseases, at UMMC's midtown campus, partners with the UMSOM's Institute of Human Virology (IHV), providing access to innovative programs such as the JACQUES Initiative, which offers HIV and hepatitis C testing, as well as peer counseling and support groups for people living with HIV.

A multidisciplinary team of experienced providers — including infectious disease specialists, psychiatrists, pharmacists, social workers, substance abuse counselors and dietitians — collaborate daily on patient treatment plans. The center provides on-site lab services, help with psychosocial needs, insurance coverage, and access to free legal counsel at the UM School of Law.

Connect2Care is a program for those who are newly diagnosed or previously diagnosed with HIV but not receiving care, to walk into the Center, unscheduled, for an intake appointment. During this initial appointment, patients will meet with a social worker, nurse, and other team members, have blood drawn, and then leave with a follow-up appointment to continue care.

Janaki Kuruppu, MD, assistant professor of medicine, has focused on caring for patients in Maryland, treating a wide variety of infectious diseases. Her research and clinical experience included working in Africa and the Caribbean.



Dr. Redfield will lead the top public health agency.

Dr. Kuruppu examines a patient.



Dr. Charurat

UMSOM's Redfield Named New CDC Director

Renowned clinical AIDS researcher **Robert Redfield, MD**, professor of medicine at the UMSOM and co-founder and associate director of its IHV, was named director of the US Centers for Disease Control and Prevention (CDC), the federal government's top public health agency.

Dr. Redfield was formerly the Robert C. Gallo, MD, Endowed Professor in Translational Medicine, and is an expert in public health and infectious diseases.

After his career at Walter Reed Army Medical Center, he co-founded the IHV in 1996 and helped the patient base grow to 6,000 in Baltimore and Washington, DC, and more than 1.3 million in African and Caribbean nations.

Measuring the Impact of HIV Programs in Nigeria

The Institute of Human Virology (IHV) is leading a \$100 million project to measure the reach and impact of HIV programs in Nigeria — the largest population-based HIV survey conducted in a single country. The results will guide a strategy for Nigeria's HIV prevention and treatment.

The study's principal investigator is **Man E. Charurat, PhD, MHS**, professor of medicine at the UMSOM and director of the Division of Epidemiology and Prevention at IHV.

The research is funded by the CDC, in collaboration with the Nigerian government and the Global Fund to Fight AIDS, Tuberculosis and Malaria.



Dr. Kotloff with Dilruba Nasrin, MBBS, PhD, assistant professor of medicine, and youths in The Gambia

Eliminating Global Vaccine-Preventable Diseases

In April, the University of Maryland School of Medicine merged its Center for Vaccine Development, first established in 1974, and its Institute for Global Health, to launch the **Center for Vaccine Development and Global Health (CVD)**, led by **Kathleen Neuzil, MD, MPH, FIDSA**, professor of medicine and pediatrics at the UMSOM. **Dr. Neuzil is one of the world's most influential research scientists and advocates in vaccine development and policy.**



Dr. Neuzil and the center's staff build upon a legacy of four decades of vaccine development and global infectious and tropical disease research by **Myron M. Levine, MD, DTPH**, the Simon and Bessie Grollman Distinguished Professor and associate dean for global health, vaccinology and infectious diseases, who founded the original CVD.

As part of the new organizational structure, the new CVD leadership team includes the following UMSOM faculty:

Karen Kotloff, MD, professor of pediatrics and associate director for clinical research.

Miriam Laufer, MD, MPH, professor of pediatrics and associate director for malaria research.

Marcelo Szein, MD, professor of pediatrics and associate director for basic and translational research.

Helping the World's Most Underserved Communities

Expert vaccinologists in CVD continued their work to develop vaccines to protect millions of people each year from diarrheal diseases, a leading cause of death among children under 5 in low-resource settings, and typhoid fever. CVD serves as lead manager of the TyVAC multinational consortium of clinical trials of a conjugate typhoid vaccine.

CVD is one of only a few institutions in the United States that is part of the National Institute of Health's Vaccine and Treatment Evaluation Unit, studying and developing influenza vaccines such as for H7N9, or avian flu. This important research is intended as preparation against pandemics.

Dr. Szein



Dr. Laufer





High-Fidelity Simulation and Training

TO SAVE Lives

Physician experts and education specialists train residents and new-graduate nurses, as well as United States military personnel, first responders and staff from other hospitals across the region, in two high-fidelity simulation and training centers at UMMC.



The teaching and learning also applies to the public, through Stop the Bleed classes that teach anyone how to stop life-threatening bleeding until medics arrive.

Habeeba Park, MD, (above right) assistant professor of surgery at the UMSOM and medical lead for the program at the R Adams Cowley Shock Trauma Center, and Alexandra Del Barco, BSN, RN, PCCN, TCRN, (left) are among the trauma center staff who teach the community

how to apply pressure to a wound and pack it or even apply a tourniquet to stop the bleeding until medical help arrives, through the national Stop the Bleed Initiative from the American College of Surgeons. Stop the Bleed training has put lifesaving skills in the hands of those who initially felt helpless.

Anyone can save a life — if they know what to do.

Simulation and Training

Free Classes Teach Anyone to Stop the Bleed

Stop the Bleed is a program that teaches anyone without a medical background how to control a life-threatening bleed until help arrives — whether it's a gunshot wound, a kitchen injury, a vehicle crash or a workplace injury.

Staff at the R Adams Cowley Shock Trauma Center at UMMC teach the course at community centers, houses of worship, universities, high schools and businesses to make the training accessible to all Marylanders.

"The training is the equivalent of bystander CPR or learning to use an AED. Anyone can learn the lifesaving skills of bleeding control," said **Thomas Scalea, MD**, physician-in-chief of the R Adams Cowley Shock Trauma Center and the Francis X. Kelly Distinguished Professor in Trauma Surgery at the UMSOM. *"It's simple: if we do not stop the bleeding, the person dies."*

Stop the Bleed is a national campaign sponsored by the American College of Surgeons and carried out in Maryland through a collaboration with the Maryland Committee on Trauma and the R Adams Cowley Shock Trauma Center.

The public can register at umm.edu/StopTheBleed



Dr. Scalea



University of Maryland, Baltimore President Jay Perman, MD, attended a Stop the Bleed class at Shock Trauma.



Shock Trauma's Critical Care and Trauma Education

The R Adams Cowley Shock Trauma Center at UMMC is named for the late surgeon who pioneered trauma care in the 1970s, laying a foundation for a center that continues to serve as a global resource.

Harnessing all of this expertise, Shock Trauma operates a 10,000-square-foot medical simulation area to train resident physicians, nurses, respiratory therapists, first responders and other staff for real-life scenarios in trauma and critical care. Located within the Shock Trauma Critical Care Tower, the Simulation Center taught more than 7,000 people in more than 800 classes during 2017.

The center is led by **Samuel A. Tisherman, MD**, professor of surgery at the UMSOM and director of the Division of Critical Care and Trauma Education.



Classes cover advanced trauma life support, ECMO, critical care lung disease, sepsis and other specialized topics. A course on pain control, for example, includes augmented-reality and virtual-reality components.

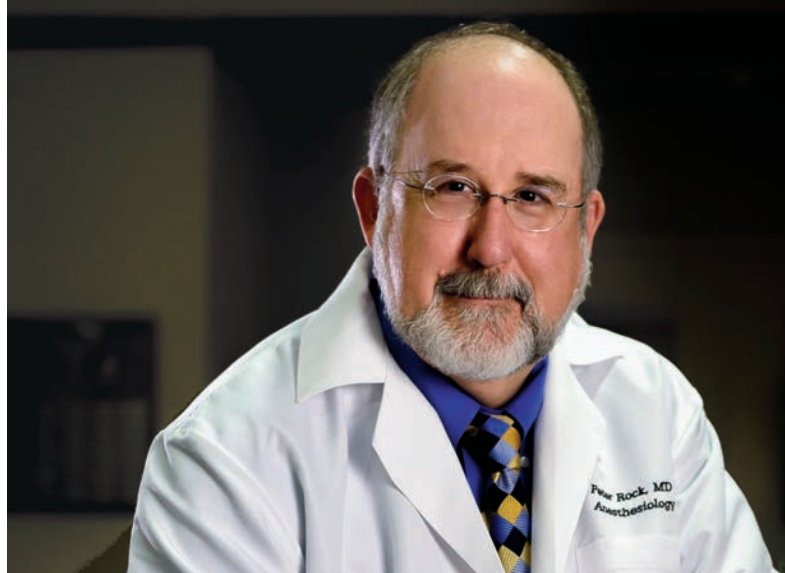
"In addition to our airway-management course for EMS staff, we are currently piloting an ultrasound course for EMS as a point of injury decision-making tool," Dr. Tisherman says. *"This means they can identify where a person is bleeding internally and make an informed transport decision through this new tool. We are advancing EMS care across the state."*

Mastery Through Simulation

The acronym for the **Maryland Advanced Simulation, Training, Research and Innovation (MASTRI) Center** comes out sounding like the word “mastery,” which is an apt term. In the MASTRI Center, faculty, residents, fellows, medical students, nurses and other patient care staff can perfect their skills and even hone their bedside manner with sophisticated patient simulators, trained actors and a highly experienced staff of educators, who can customize a curriculum and simulation for any situation.

The Center serves all departments in UMMC and the UMSOM and can train clinical and operational staff for challenging situations in medical and behavioral health care. Learners from other hospitals and outside entities also use the MASTRI Center, and the Center provides tours to high school students exploring careers in health care.

The center opened in 2006, through collaboration by the departments of Surgery, Anesthesiology, and Obstetrics, Gynecology and Reproductive Services, as well as the US Air Force Center for Sustainment of Trauma Readiness Skills (C-STARS). The Department of Anesthesiology manages the MASTRI Center, and **Peter Rock, MD, MBA, FCCM**, professor at the UMSOM and the Dr. Martin Helrich Chair in Anesthesiology, serves as its medical director.



“The highly experienced staff of the MASTRI Center provides a safe learning environment using high-fidelity simulation, skills training and standardized-patient activities to develop and enhance the learner’s knowledge, skills and confidence.”

– Dr. Rock

Simulations range from the simple — insertion of an intravenous catheter — to the complex — performing a bronchoscopy — and are especially useful to prepare clinicians for rare events. **MASTRI also teaches crisis management using situations that require multidisciplinary teamwork and prioritization.**

In the safe environment of the MASTRI Center, clinicians can use a variety of technology and advanced simulators for procedural skills practice, as well as lively team learning. A surgical resident can practice sutures until they perfect them, before operating on patients. Most important of all, a team can practice a critical patient scenario and review the performance of the team in an emergency.

The simulations are set up by the staff to seem as real as possible. Some patient simulators bleed fake blood and the Center has even simulated a fire in the operating room. Another simulation can “deliver” a newborn, for residents and nurses working in obstetrics or the Emergency Department.

Sessions may be videotaped, and after a training session, the team can debrief and analyze its performance in the clinical scenario — and whether the members successfully communicated with each other. Additional learners can also view a live stream of the simulation. This allows for an increased number of learners in this formative experience.

One of the staff members is a trained actor, which helps her convincingly play the role of a patient or patient family member. Other actors are brought in as needed so, for example, participants can practice communicating sensitive news with care and compassion. Actors are also used to play the role of other clinicians to add to the reality of a multidisciplinary clinical simulation.





Keeping Marylanders

FOREVER **Mobile**





The Baby Boom generation is getting hip to the need for rehabilitation therapy to recover from stroke, joint replacement or traumatic injuries.

The Baltimore Hip Studies is an interdisciplinary research initiative involving 25 hospitals, including the UM Rehabilitation & Orthopaedic Institute, and is the largest hospital research network in the world devoted to the study of hip fracture.

UMSOM Professor Jay Magaziner, PhD, MSHyg, is a founder and key researcher in the studies, which have led to a better understanding of the consequences of hip fracture and to key innovations in the treatment of this injury.



Forever Mobile

The Baltimore Hip Studies

Dr. Magaziner, who is professor and chair of the Department of Epidemiology and Public Health at the UMSOM, as well as director of the **Center for Research on Aging**, is a pioneer in the study of hip fractures. He led an international clinical trial involving 148 sites that tested the now-standard use of a bisphosphonate medication to reduce refracture and mortality in older patients. He and his colleagues are now **studying hip fractures in men, and testing interventions to improve mobility and independence after hip fracture.**

Denise Orwig, PhD, associate professor of epidemiology and public health at the UMSOM, is the current director of the Baltimore Hip Studies. She has led a multi-center trial of innovative physical therapy to restore the ability to walk after hip fracture.

She is now leading two clinical studies, one on the effects of testosterone and exercise on mobility in women after a hip fracture, and another on the effect of protein supplementation and intensive exercise on mobility after fracture.



Festival of Science Focuses on Aging and Mobility

These studies were only part of the University of Maryland School of Medicine's fifth annual Festival of Science in December 2017. At the event, leading scientists discussed their work on aging and mobility. A one-day celebration of research at the school, **the event highlighted new research on bone, muscle and joint function; the role of exercise and nutrition in muscle recovery; and vascular and neurologic diseases and their impact on balance, mobility and cognition.**

Decoding Brain Glitches that Lead to Falls

Falls are the leading cause of injury and injury-related deaths in people over age 65, and the leading cause of traumatic brain injury. **Every year, there are 258,000 hip fractures in the United States.** A quarter of these people die within a year, and half suffer a major loss of independence.

"The danger from falls is really under-recognized," said **Kelly Westlake, PhD, MSc, PT**, assistant professor of physical therapy and rehabilitation science at the UMSOM.

For the past several years, she has been studying why older people fall more frequently. Surprisingly, she has found that falling appears to include a cognitive problem, rather than being a purely physical issue. In her lab, she has devised a way to measure the influence of cognitive activity while people are falling.

Her subjects wear a body harness that allows them to fall without being hurt.

Westlake's research is the first to show links between falling and the ability to shift attention quickly, as well as between falling and speed and accuracy. Her work is important because it suggests that cognitive training integrated with balance training may help older adults avoid falls.

Dr. Westlake presenting at Festival of Science



Unraveling Potential Links Between Narrowed Arteries and Cognitive Problems

More than 80 percent of adults over the age of 65 have atherosclerosis, which increases the risk for heart disease and stroke — and may lead to cognitive impairment, dementia and Alzheimer's disease.

Brajesh Lal, MBBS, professor of surgery at the UMSOM, studies the carotid artery. **He theorizes that when this artery becomes narrowed, less blood — and as a result, less oxygen — reaches the brain, damaging the organ.** Often people with this narrowing do not have obvious cardiovascular symptoms.

Researchers estimate that 8 million people in this country have asymptomatic narrowing of the carotid artery. Lal suggests that some of these people may be suffering from brain problems related to the narrowing, and might be good candidates for surgery to remove carotid plaques.

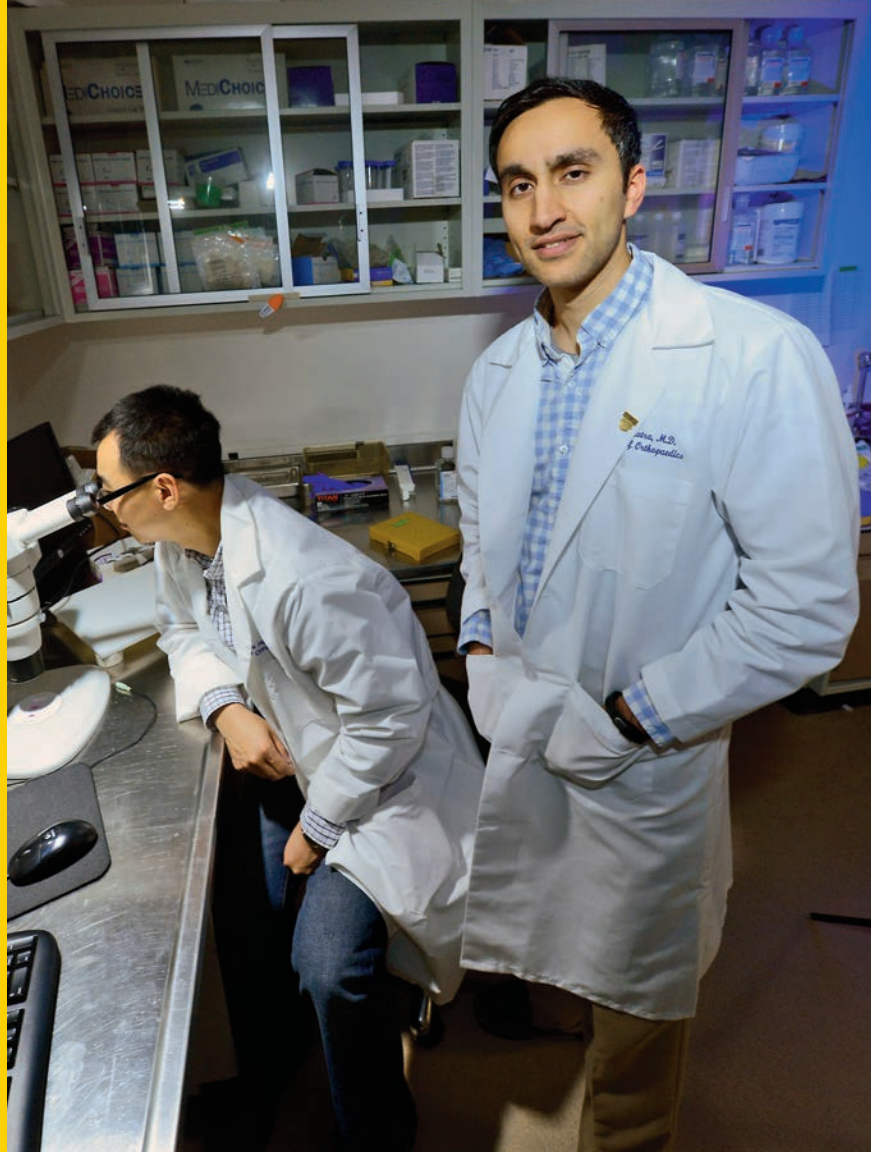


Success After Shoulder Surgery

A research team led by **Mohit N. Gilotra, MD**, assistant professor of orthopaedics at the UMSOM, received the prestigious 2018 Charles S. Neer Award from the American Shoulder and Elbow Surgeons. The award-winning clinical study demonstrated an **effective method to potentially reduce the risk of serious infection following shoulder surgery.**

"Post-operative infection is a serious problem for patients, and our researchers presented clear evidence that using benzoyl peroxide before surgery significantly reduced the level of P. acnes that can pose a risk of infection. This represents a promising alternative to traditional skin preparations," said **Andrew N. Pollak, MD**, the James Lawrence Kernan Endowed Professor and Chair in the Department of Orthopaedics at the UMSOM. *"I applaud Dr. Gilotra and his colleagues for this well-deserved honor."*

"This research breaks new ground in evaluating how we can control potentially devastating infections following shoulder surgery and illustrates one of the many ways that our faculty members are advancing science for the benefit of patients," said **E. Albert Reece, MD, PhD, MBA**, dean of the UMSOM. *"We are very pleased that University of Maryland School of Medicine scientists have been chosen to receive this international recognition."*



UM Rehabilitation Network

The University of Maryland Rehabilitation Network is a coordinated system of inpatient and outpatient rehabilitation providers working together to help people recover from stroke, joint replacement, traumatic injury and other illness. Offering a full range of physical rehabilitation services, the network brings together **expert teams of committed care providers from facilities all across the state**, ranging from community hospitals to a large academic medical center.

Because it's important to have rehabilitation services close to where patients live, the UM Rehabilitation Network offers care at several locations throughout Maryland.

Sarah Hughes, RN, with a patient at UM Shore Medical Center at Easton, part of the UM Rehabilitation Network



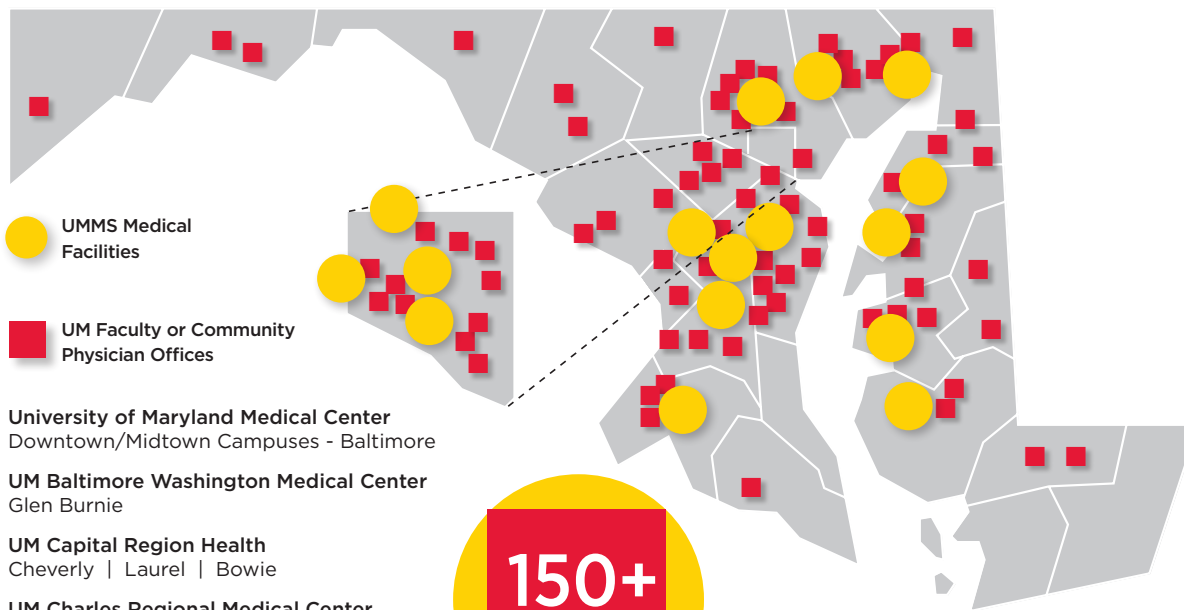
Claudia Cavey, RN, with a patient at UM Baltimore Washington Medical Center, part of the UM Rehabilitation Network



 *Together, We Provide*

THE CARE Maryland Needs

The **University of Maryland Medical System** includes 14 hospitals, two freestanding emergency centers and nearly 140 outpatient locations and urgent care centers, where a network of physicians, including top doctors in the community, work side by side with **University of Maryland School of Medicine** faculty physicians and surgeons to bring patients advanced expertise and care. All of this is connected to the **University of Maryland Medical Center**, the flagship academic medical center of the system.



University of Maryland Medical Center
Downtown/Midtown Campuses - Baltimore

UM Baltimore Washington Medical Center
Glen Burnie

UM Capital Region Health
Cheverly | Laurel | Bowie

UM Charles Regional Medical Center
La Plata

UM Rehabilitation & Orthopaedic Institute
Baltimore

UM St. Joseph Medical Center
Towson

UM Shore Regional Health
Chestertown | Dorchester | Easton | Queenstown

UM Upper Chesapeake Health
Bel Air | Havre de Grace

Mt. Washington Pediatric Hospital
Baltimore | Cheverly

An extensive network of primary care physicians, specialists and surgeons see patients at locations throughout Maryland, including UMMS hospitals.

University of Maryland Faculty Physicians, Inc. provides care throughout all counties in Maryland and Baltimore City.

UM Community Medical Group provides care throughout Anne Arundel County, Charles County, Baltimore City and the Eastern Shore.

UM St. Joseph Medical Group has offices in communities throughout Greater Baltimore.

UM Upper Chesapeake Medical Services has physician practices throughout Harford County.



UMMC

University of Maryland Medical Center, the flagship academic medical center at the heart of UMMS, consists of the 757-bed downtown Baltimore campus and the 120-bed midtown campus one mile north. The medical staff comprises nearly 1,200 attending physicians and surgeons who are employed faculty members at the University of Maryland School of Medicine, as well as 900 residents and fellows in all medical specialties. UMMC is home to the Marlene and Stewart Greenebaum Comprehensive Cancer Center, the R Adams Cowley Shock Trauma Center and the University of Maryland Children’s Hospital.

UMMC 2018 HIGHLIGHTS INCLUDE:

- The annual *U.S. News & World Report* Best Hospitals issue in 2018 ranked UMMC in the **top 50 for Pediatric Cardiology and Heart Surgery, Cancer, Diabetes and Endocrinology, ENT and Urology.**
- The Medical Center accelerated “campus integration” efforts in 2018 to **align operations across the downtown and midtown campuses to improve quality of care and patient satisfaction across both locations.** The midtown campus now serves as headquarters for the nationally ranked Center for Diabetes and Endocrinology, as well as infectious disease, ophthalmology, pulmonology and other UMMC services. The “One Hospital, Two Campuses” goal is coming to fruition as a model of integration centered on clinical excellence and patient access.
- The University of Maryland Transplant Center worked with a grateful liver transplant patient, Maryland Speaker of the House Michael E. Busch, to **pass two new laws helping transplant donors and recipients this year, while continuing to be one of the top centers in the country.**
- The University of Maryland Greenebaum Comprehensive Cancer Center is **leading immunotherapy treatment for advanced lymphoma, as well as pioneering a new radiation therapy system for breast cancer.**
- The International Board of Lactation Consultant Examiners and International Lactation Consultant Association have recognized UMMC for **excellence in staffing and programs to support breastfeeding and increasing the percentage of new mothers at UMMC who breastfeed.**

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BALTIMORE, MD 21201
410-328-8667

UMMC MIDTOWN CAMPUS
827 LINDEN AVENUE
BALTIMORE, MD 21201
410-225-8000

umm.edu



UM BWMC

University of Maryland Baltimore Washington Medical Center provides comprehensive primary and specialty health care to residents of Anne Arundel County and the surrounding region. UM BWMC’s expert physicians and experienced, compassionate staff care for the community through both outpatient and inpatient care. UM BWMC offers primary and geriatric care, and advanced specialty care through its Tate Cancer Center, Aiello Breast Center and Pascal Women’s Center, as well as orthopaedic, cardiac, vascular and neuroscience services.

UM BWMC 2018 HIGHLIGHTS INCLUDE:

- UM BWMC was recognized by *U.S. News & World Report* in its listing of 2018-19 Best Hospitals and was rated as “High Performing” in **four adult procedures and conditions.**
- The American College of Cardiology Foundation recognized UM BWMC with its NCDR ACTION Registry Platinum Performance Achievement Award for 2017. The award recognizes UM BWMC’s commitment and success in **implementing a higher standard of care for heart attack patients**, and signifies that the medical center has reached an aggressive goal of treating these patients to standard levels of care as outlined by the American College of Cardiology/American Heart Association clinical guidelines and recommendations.
- UM BWMC received the Mission: Lifeline STEMI Receiving Center Gold Quality Achievement Award for implementing specific quality improvement measures outlined by the American Heart Association for the treatment of patients who suffer severe heart attacks. UM BWMC has received the Mission: Lifeline award since its inception in 2010.

UM BWMC
301 HOSPITAL DRIVE
GLEN BURNIE, MD 21061
410-787-4000

umbwmc.org



University of Maryland Capital Region Health, the newest member of University of Maryland Medical System, includes UM Prince George's Hospital Center, UM Laurel Regional Hospital, UM Bowie Health Center, UM Capital Region Surgery Center and UM Capital Region Medical Group.

Working side by side with specialists at the University of Maryland School of Medicine and community physicians, UM Capital Region Health provides primary and specialty health care and has made significant strides toward achieving its goal of providing comprehensive, high quality, accessible care to the residents of Prince George's County and the surrounding areas. UM Capital Region Health boasts a 97 percent survival rate in the state's second busiest trauma center along with an award-winning primary stroke program.

UM CAPITAL 2018 HIGHLIGHTS INCLUDE:

- UM Capital Region Health broke ground in 2017 on the new University of Maryland Capital Region Medical Center. The state-of-the-art medical complex in Largo is anticipated to open in 2021 and will promote wider access to primary and preventive care services aimed at improving the health status of Prince George's County and Southern Maryland residents.
- UM Prince George's Hospital Center's Cardiac Surgery Program earned the highest rating from the Society of Thoracic Surgeons for the quality of its coronary artery bypass grafting procedure — the most common type of open heart surgery. The "3-star" rating is achieved by only 12 to 15 percent of hospitals ranked nationwide. In addition to earning this high quality rating, the program has achieved consistently high patient satisfaction scores and a shorter-than-average hospital stay.

UM BOWIE HEALTH CENTER
15001 HEALTH CENTER DRIVE
BOWIE, MD 20716
301-262-5511

UM LAUREL REGIONAL HOSPITAL
7300 VAN DUSEN ROAD
LAUREL, MD 20707
301-725-4300

UM PRINCE GEORGE'S
HOSPITAL CENTER
3001 HOSPITAL DRIVE
CHEVERLY, MD 20785
301-618-2000

umcapitalregion.org



University of Maryland Charles Regional Medical Center is an acute-care community hospital serving Charles County, one of the fastest-growing counties in Maryland. UM CRMC has earned the distinction of being designated as a Primary Stroke Center by the Maryland Institute for Emergency Medical Services Systems. UM CRMC has provided excellence in acute health care and preventive services for more than 75 years.

UM CRMC 2018 HIGHLIGHTS INCLUDE:

- The American Heart Association/American Stroke Association awarded UM CRMC the Get With The Guidelines-Stroke Gold Plus Quality Achievement Award for ensuring stroke patients receive the most appropriate treatment according to nationally recognized guidelines. UM CRMC also received the Association's Target: Stroke Honor Roll award for meeting quality measures.
- UM CRMC received the Workplace Excellence Seal of Approval, Health & Wellness Seal of Approval, and EcoLeadership awards from the Alliance for Workplace Excellence. The EcoLeadership award recognizes organizations who demonstrate visionary leadership and an outstanding commitment to environmentally sustainable workplaces.
- The UM Charles Regional Center for Wound Healing received the Robert A. Warriner III, MD, Center of Excellence award for the fourth consecutive year. To achieve this honor, the center received more than 92 percent patient satisfaction ratings and healing rates of at least 91 percent. The center also received the Center of Distinction award for the fifth successive year.
- UM CRMC received the 2018 Reed W. McDonagh Business of the Year Award from the Charles County Chamber of Commerce for its substantial and continual contributions to business and community development, improving the quality of life for Charles County residents.

UM CRMC
5 GARRETT AVENUE
LA PLATA, MD 20646
301-609-4000

umcharlesregional.org



**UM REHAB
& ORTHO**

University of Maryland Rehabilitation & Orthopaedic Institute is the state's largest rehabilitation and orthopaedic hospital, serving both adults and children. UM Rehab & Ortho is licensed as an acute care hospital and has been providing specialized care for over 125 years, continuing to offer unique and important services to people with neurological and muscular disease. UM Rehab & Ortho remains a leader in sports medicine, neurological disease such as stroke, musculoskeletal disease, research and robotic technologies to improve movement.

UM REHAB & ORTHO 2018 HIGHLIGHTS INCLUDE:

- UM Rehab & Ortho continued to be a **strong voice for innovation and community support for patients** in need of programs and care that get them moving.
- Trending topics this year included the **spine program, Adaptive Sports Festival, Paragolfer, traumatic brain injury, pain management and pediatric orthopaedics.**
- Coverage saturated the local Baltimore market, and expanded to **national coverage** on several stories, including *Family Circle*, WTOP radio (Washington, DC), and several prominent online media that reach both consumers and health care professionals.
- UM Rehab & Ortho's professional staff continue to be **recognized thought leaders** throughout the region as they advance rehabilitation care for patients.
- The highly specialized staff take an **interdisciplinary approach to caring for people recovering from stroke and neurological diseases as well as spinal cord, brain or other traumatic injury.** UM Rehab & Ortho offers a higher intensity of therapy than is found in other levels of care.
- The physicians and clinical staff are **engaged in research initiatives** designed to develop new practices and improve patient outcomes. Ongoing education and training includes professional development for clinical staff and community outreach programs to raise awareness of the challenges facing people with disabilities.

UM REHAB & ORTHO
2200 KERNAN DRIVE
BALTIMORE, MD 21207
410-448-2500

umrehabortho.org



UM SJMC

University of Maryland St. Joseph Medical Center has been providing loving service and compassionate care since its founding in 1864 by the Sisters of St. Francis of Philadelphia. Its Catholic heritage ever-present, UM SJMC offers a wide range of clinical programs and centers of excellence including the Cancer, Heart and Orthopaedic Institutes, women and children's services, and urgent and emergent care to Baltimore County communities. UM SJMC also boasts a high-quality cardiac surgery program and is a Primary Stroke Center.

UM SJMC 2018 HIGHLIGHTS INCLUDE:

- The American College of Cardiology awarded UM SJMC with the NCDR ACTION Registry Platinum Performance Achievement Award for 2018. UM SJMC is one of only 203 hospitals nationwide to receive the honor. The award recognizes its **commitment and success in implementing a higher standard of care for heart attack patients** and signifies that UM SJMC has reached an aggressive goal of treating these patients to standard levels of care as outlined by the American College of Cardiology/American Heart Association clinical guidelines and recommendations.
- UM SJMC received the American Heart Association/American Stroke Association's Get with the Guidelines-Stroke Silver Plus Quality Achievement Award for **ensuring that stroke patients receive the best treatment according to nationally recognized guidelines.**
- In 2017, UM SJMC was named a **Top 17 Total Hip and Knee Replacement Hospital** in the United States by the Centers for Medicare & Medicaid Services, based on its complication rates, patient experience and cost.

UM SJMC
7601 OSLER DRIVE
TOWSON, MD 21204
410-337-1000

umstjoseph.org



University of Maryland Shore Regional Health is the leading provider of comprehensive health care services for the residents of Caroline, Dorchester, Kent, Queen Anne's and Talbot counties on Maryland's Eastern Shore. UM Shore Regional Health operates three hospitals, a freestanding emergency center, two home care agencies (UM Chester River Home Care and UM Shore Home Care); and a wide array of outpatient care centers providing diagnostic, treatment and rehabilitation care services.

During Fiscal 2018, UM Shore Regional Health recruited new physicians and advanced practice providers in such areas as cardiology, diabetes, ear, nose, and throat, neurology and sleep medicine, primary care, surgical care and women's health.

UM SRH 2018 HIGHLIGHTS INCLUDE:

- Progress was made in the construction of **UM Shore Medical Pavilion** at Denton, slated to open in early 2019.
- The Cardiac Cath Lab at UM Shore Medical Center at Easton was **designated a Cardiac Intervention Center by the Maryland Institute for Emergency Medical Services Systems.**
- UM Shore Medical Center at Easton's Primary Stroke Center **received the Get With The Guidelines-Stroke Gold Plus Achievement Award with Target: Stroke Honor Roll** by the American Heart Association/American Stroke Association.
- UM Shore Regional Health's Requad Center for Acute Rehabilitation earned **reaccreditation** by the Commission on Accreditation of Rehabilitation Facilities.
- The **implementation of telemedicine technology** in the delivery of palliative care and behavioral health services enhanced access to care by reducing patient transfers and physician travel time.

UM SHORE MEDICAL CENTER AT EASTON
219 S. WASHINGTON STREET
EASTON, MD 21601
410-822-1000

UM SHORE MEDICAL CENTER AT CHESTERTOWN
100 BROWN STREET
CHESTERTOWN, MD 21620
410-778-3300

UM SHORE MEDICAL CENTER AT DORCHESTER
300 BYRN STREET
CAMBRIDGE, MD 21613
410-228-5511

UM SHORE EMERGENCY CENTER AT QUEENSTOWN
115 SHOREWAY DRIVE
QUEENSTOWN, MD 21658
410-827-3900



University of Maryland Upper Chesapeake Health is an award-winning health system that provides acute inpatient care and an array of outpatient services throughout the northeast Maryland corridor, including urgent care centers. Rooted in Harford County, UM UCH is dedicated to maintaining and improving the health of the people in the communities it serves. UM UCH offers the highest quality care through UM Upper Chesapeake Medical Center (UM UCMC), UM Harford Memorial Hospital (UM HMH), Kaufman Cancer Center and advanced service lines such as orthopaedics and spine care, heart and vascular, robotic-assisted surgery options, highly specialized rehabilitation services and a robust list of additional outpatient services and community-based programs.

UM UCH 2018 HIGHLIGHTS INCLUDE:

- The National Committee for Quality Assurance announced that Upper Chesapeake Hematology & Oncology Services earned a **Level 3 recognition** as a Patient-Centered Specialty Practice, **the highest level possible.** For the Oncology Medical Home category, Upper Chesapeake Hematology & Oncology Services is the only practice recognized with the honor in Maryland and one of only 21 presented with the designation across the United States. Other Kaufman Cancer Center awards included a 2018 Lung Cancer Screening Center of Excellence by the Lung Cancer Alliance and a Certified Quality Breast Center of Excellence by the National Quality Measures for Breast Centers.
- UM UCH received the 2018 Minogue Award for Patient Safety Innovation, one of its **top honors** for the program "S.T.A.R.T. with the Patient: A Safe Transition Assessment and Risk Tool." The American Association of Critical-Care Nurses recognized UM UCMC's ICU with the 2018 Beacon Award for Excellence for successfully improving patient outcomes. The 2018 Maryland Rural Health Program Award was awarded to the Wellness Action Teams of Cecil and Harford County, recognizing the incredible work accomplished by UM UCH and its many community partners.

UM HARFORD MEDICAL CENTER
501 SOUTH UNION AVENUE
HAVRE DE GRACE, MD 21078
443-843-5000

UM UPPER CHESAPEAKE MEDICAL CENTER
500 UPPER CHESAPEAKE DRIVE
BEL AIR, MD 21014
443-643-1000

umuch.org

umshoreregional.org



Mt. Washington Pediatric Hospital in Northwest Baltimore is a pediatric rehabilitation hospital that has played a key role in children's health care since 1922. It is uniquely operated and a member of both University of Maryland Medical System and Johns Hopkins Medicine. It offers integrated medical care for both inpatients and outpatients in a family-friendly atmosphere. Children are able to heal, grow, and learn the skills that lead to happier, more independent lives.

MWPH 2018 HIGHLIGHTS INCLUDE:

- Three nurses at MWPH were honored by *Baltimore* magazine at the "Excellence in Nursing" awards event. Jenny Bowie, RN, BSN, MBA, chief nurse executive, was recognized in the management category; Barbara Moore, MSN, RN, CRNP, was recognized in the pediatric neonatal category; and Stanjay Daniels, RN, in the pediatric non-neonatal category. The nurses were among 50 who were honored for extraordinary contributions to health care in the region.
- MWPH patients and families participated in the **Speak Now for Kids Family Advocacy Day**, sponsored by the Children's Hospital Association, in Washington, DC, in June. MWPH, a 15-year-old patient and her family joined others from around the country to share stories of their health care journey with legislators to illustrate why all children need children's hospitals, and how public policy can influence their access to health care.
- Eighteen physicians at MWPH were recognized as "**Top Doctors**" in the November 2017 issue of *Baltimore* magazine.

MWPH
1708 WEST ROGERS AVENUE
BALTIMORE, MD 21209
410-578-8600

**MWPH AT PRINCE GEORGE'S
HOSPITAL CENTER**
3001 HOSPITAL DRIVE
CHEVERLY, MD 20785
301-618-3866

mwph.org



University of Maryland Community Medical Group (UM CMG) is a primary care, multi-specialty physician-led group and a trusted partner of University of Maryland Faculty Physicians Inc. With a focus on high-quality, patient-centered care, UM CMG providers partner with patients on a path to good health.

The medical group's physicians and advanced practice providers include those who specialize in primary care, as well as pediatric, heart, cancer, diabetes, orthopaedic, women's and urologic care and other disciplines. They see patients at more than 80 locations in Anne Arundel County, Charles County, Baltimore City and on the Eastern Shore.

In Fiscal 2019, the University of Maryland Community Medical Group will transform into a new network of UMMS-affiliated physicians and providers serving communities throughout the state.

umcmg.org



University of Maryland Medical System Health Plans is a subsidiary of UMMS that offers Medicaid and Medicare health insurance plans. UMMS Health Plans promotes strong doctor-patient relationships — connecting its members to a large local network of physicians and providers — and combining health coverage with added benefits and services.

Two plans are offered:

University of Maryland Health Partners contracts with Maryland Department of Health (MDH) as a Medicaid Managed Care Organization to serve the HealthChoice program's enrollees. (Maryland's Medicaid program is known as HealthChoice.) Currently, UM Health Partners has more than 52,000 members and more than 7,000 health care providers across Maryland.

University of Maryland Health Advantage is an HMO and HMO-SNP plan that contracts with the US Centers for Medicare and Medicaid Services and MDH to provide health care coverage for more than 10,800 seniors who are Medicare beneficiaries. The plan offers greater value than original Medicare, with lower out-of-pocket costs.

ummshealthplans.com



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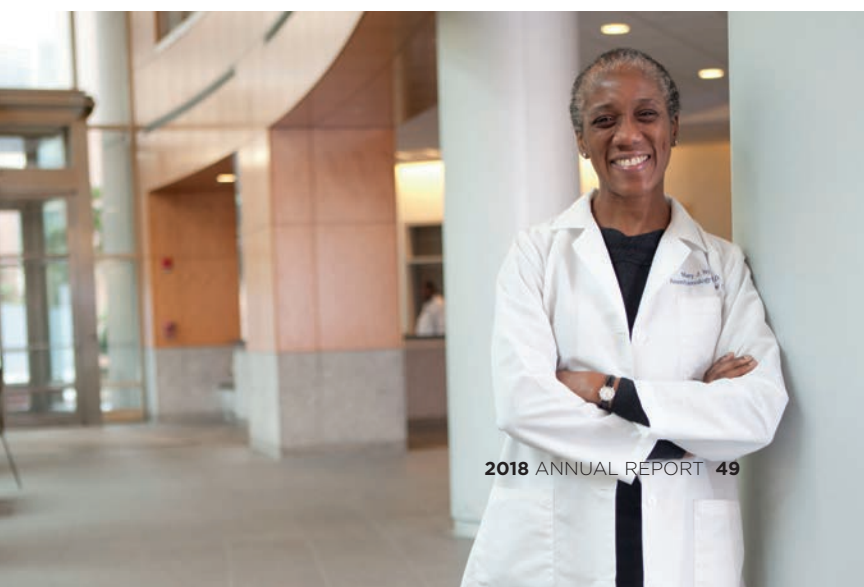
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As part of the University of Maryland Medical Center’s plan to accelerate the integration of its downtown and midtown campuses, **Alison Brown, BSN, MPH**, was appointed president of UMMC’s midtown campus in February 2018. She continues in her role as senior vice president and chief strategy officer for University of Maryland Medical System.

An influential leader at both UMMC’s downtown campus and across the entire Medical System, Ms. Brown is leading the midtown campus clinicians and staff with focus on the health needs of the community, achieving the benefits of integration to improve patient safety and quality of care and to expand clinical programs.



Sherry B. Perkins, PhD, RN, FAAN, an accomplished clinician and hospital executive, was named president and chief executive officer of University of Maryland Capital Region Health on August 9, 2018, after a national search conducted by UMMS.

Dr. Perkins had been executive vice president and chief operating officer of UM Capital Region Health since 2016. During these two years, she has been a catalyst for collaborative clinical, workforce, operational and financial performance improvements. Her previous experience includes serving as chief nursing officer for Anne Arundel Medical Center. From 1991-2006, Dr. Perkins was a clinical leader who held positions of increasing responsibility at the University of Maryland Medical Center, where she ultimately served as vice president for patient care service and clinical effectiveness.



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* *Outgoing president of the medical staff*
** *Incoming president of the medical staff*

“The University of Maryland Medical System this year expanded its reach to serve nearly one million more people in Prince George’s County and Southern Maryland, through our newest affiliate, UM Capital Region Health. This tremendous accomplishment involved partnership with community leaders and federal, state and local and government, and the University of Maryland School of Medicine. Our expansion is a direct result of our mission to be the university-based regional health care system that puts Maryland first.”

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



2018

Finances

Facts &



UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

FISCAL 2018 FACTS

| | |
|---------------------------------------|--------------|
| FACULTY | 2,970 |
| Full-time | 1,404 |
| Part-time | 302 |
| Adjunct | 1,264 |
| STAFF | 3,058 |
| UM Faculty Physicians Inc. | 1,276 |
| UM School of Medicine | 1,782 |
| STUDENTS | 1,261 |
| Medical | 621 |
| MD/PhD | 54 |
| Graduate (MS, PhD) | 286 |
| Public Health | 55 |
| Physical Therapy (DPT, GPLS-PTRS PhD) | 192 |
| Genetic Counseling | 16 |
| Medical and Research Technology | 29 |
| Clinical Research Certificate | 8 |
| POST-DOCTORAL FELLOWS | 490 |
| Clinical | 223 |
| Research | 267 |
| RESIDENTS | 711 |
| (Trained by UMSOM Faculty) | |
| Total | 8,490 |

FISCAL 2018 FINANCES

OUR INCOME

| | |
|--|-------------------------|
| Tuition and Fees | \$ 32,170,273 |
| State Appropriations | 47,447,170 |
| Total Grants and Contracts | 536,887,610 |
| Gifts, Endowments and Other Expenses | 18,898,195 |
| Medical Services Plan | 344,900,000 |
| Reimbursements from Affiliated Hospitals | <u>178,146,514</u> |
| Total | \$ 1,158,449,762 |

{ 20.1% INCREASE

OUR EXPENSES

| | |
|----------------------------|-------------------------|
| Instruction/Training | \$ 104,260,478 |
| Research | 505,084,096 |
| Clinical Service | 498,133,398 |
| General and Administrative | <u>50,971,790</u> |
| Total | \$ 1,158,449,762 |



FISCAL 2018 FACTS

LICENSED BEDS

2,593*

EMPLOYEES

28,113*

HOSPITAL ADMISSIONS

122,309

OUTPATIENT VISITS

1,530,470

EMERGENCY VISITS

374,853

OUTPATIENT SURGICAL CASES

75,274

*Figures for licensed beds and employees are current for Fiscal 2019.

FISCAL 2018 FINANCES

OUR INCOME

| | |
|---|------------------------|
| From services to inpatients | \$2,532,828,000 |
| From services to outpatients | <u>2,366,235,000</u> |
| These services produced total gross revenue of | \$4,899,063,000 |
| Less amounts we had to deduct for contractual allowances to third-party payors | (784,180,000) |
| Less the cost of charity care for persons without the ability to pay for their care and for uncollectible accounts | <u>(237,542,000)</u> |
| Therefore, our net revenue from patient care services was | \$3,877,341,000 |
| In addition, our other revenue from operating, including state support, was | <u>544,108,000</u> |
| Thus, our total revenue from operations was | \$4,421,449,000 |

OUR EXPENSES

| | |
|--|------------------------|
| For salaries, wages and fringe benefits to our employees | \$2,045,423,000 |
| For medical supplies, pharmaceuticals and purchased services | 2,020,129,000 |
| For depreciation on our buildings and equipment | 238,166,000 |
| For interest costs on our outstanding bonds | <u>69,745,000</u> |
| All of these operating expenses totaled | \$4,373,463,000 |

OUR NET RESULTS

| | |
|---|----------------------|
| Income from operations | \$47,986,000 |
| Plus non-operating revenue net of expenses, which excludes changes in market value of financial investments and other activities | <u>71,111,000</u> |
| Net income | \$119,097,000 |

Fiscal 2018 figures are unaudited.

2018 credits

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Medical System
Anne Haddad

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| TREES | ENERGY | GREENHOUSE GAS | WATER | SOLID WASTE |
|----------------|---------------|----------------|---------------|-------------|
| 13 fully grown | 6 million BTU | 1,086 pounds | 5,890 gallons | 394 pounds |

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Athlete Morgan Gause needed to see an orthopaedic surgeon. The After Hours Sports Injury Program diagnosed her with a sprained knee and fitted her with a brace, and Morgan was on her way to recovery.



To learn more about our patients and our services, visit umms.org or medschool.umaryland.edu



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