



DEAN'S MESSAGE: What's On My Mind

A TEAM OF WORLD-RENOWNED PHYSICIANS AND RESEARCHERS ARE USING THE MOST ADVANCED IMAGING AND MINIMALLY INVASIVE SURGICAL TECHNIQUES AVAILABLE TO DIAGNOSE AND TREAT FETAL ABNORMALITIES.



What's on my mind this month are our youngest and most vulnerable patients, their families, and the extraordinary care they receive at the University of Maryland. Our new fetal medicine and pediatrics programs are tackling the most complex conditions, and providing families with hope where there was little chance for survival only a generation ago. Our very accomplished faculty places us at the very forefront of women and children's care. These programs were featured in a remarkable video by Medschool Maryland Productions, which was shown at the 2012 Fund for Medicine Gala: Building Beyond Tomorrow.

I encourage you to view the video by visiting: www.youtube.com/SchoolofMedicine.

As demonstrated in the video, the University of Maryland Center for Advanced Fetal Care is setting the standard of care for the maternal and fetal patient. A team of world-renowned physicians and researchers are using the most advanced imaging and minimally invasive surgical techniques available to diagnose and treat fetal abnormalities. Under the leadership of Christopher Harman, MD, professor and interim chair of Obstetrics, Gynecology & Reproductive Sciences, the center is attracting patients from throughout the region.

Within an integrated team of perinatologists, maternal and fetal medicine specialists, geneticists, neonatologists, pediatric cardiologists and pediatric surgeons, the Center for Advanced Fetal Care is dedicated to the care of the mother and unborn child. The team has performed more than 3,000 successful intrauterine fetal procedures and infant surgeries related to in-utero diagnosis of birth defects. The center's experts have a long history of research and innovation in fetal therapy.

As a physician-scientist whose subspecialty is maternal-fetal medicine, I am especially proud of our innovative use of technology. Sophisticated 3-D imaging techniques allow us to diagnose and treat problems in the first trimester of pregnancy. The center was the first in Maryland to offer fetoscopy—an imaging procedure that I played an instrumental role in developing. Fetoscopy uses a tiny fiberoptic camera to provide direct visualization of the fetus. I am gratified to see this technology now advancing to the next level with laser fetoscopy, which not only allows us to see the fetus, but enables us to conduct life-saving surgery in-utero.

An extraordinary continuum of care is also provided by multidisciplinary specialists through collaboration with the

departments of Surgery and Pediatrics. The smallest and sickest newborns receive care at the University of Maryland pediatric and neonatal intensive care units, where care is coordinated with fetal medicine specialists and the specialists who will provide care after delivery. Over the past five years, the University of Maryland School of Medicine has expanded its pediatric services to accommodate the urgent needs of children throughout the state, bringing in over 50 specialists to develop the highest caliber programs.

As one of the newest members of the Children's Heart Program, Sunjay Kaushal, MD, PhD, associate professor of Surgery, and director of Pediatric Cardiac Surgery, is using the most advanced technology available to diagnose and treat complex congenital heart disease. The program employs a unique team approach and includes a pediatric intensive care unit dedicated solely to patients with congenital heart disease. New doors for treatment are also being opened through research. Dr. Kaushal is the first in the world to investigate whether a child's own stem

cells can be used to treat an underdeveloped heart.

Other lead physicians include Geoffrey Rosenthal, MD, PhD, professor, Department of Pediatrics, and director, Pediatric and Congenital Heart Program, and Roger Voigt, MD, ChB, FRACS, assistant professor and head of Pediatric Surgery, Department of Surgery, and surgeon-in-chief, University of Maryland Hospital for Children. Dr. Rosenthal and Dr. Voigt have both been named to *Baltimore Magazine's* list of "Top Docs."

The video that premiered at the Fund for Medicine Gala featured the stories of several families who received life saving care for their children from the University of Maryland.

The video is a journey of hope and an inspirational testament to the skill and dedication of our faculty physicians, and the nurses and staff of the University of Maryland Medical Center. From the first images of the developing fetal heart through childbirth, infancy and beyond, our programs provide the very best care found anywhere.

In the relentless pursuit of excellence, I am
Sincerely yours,

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



The Hon. Katie O'Malley, honorary chair

The Miracle of Medicine

Gala Honors Innovators in Children's and Women's Health

► BY MARY CAIN

BUILDING BEYOND TOMORROW was the theme of the 2012 Fund for Medicine Gala, which was held on Saturday, March 3, at the Hilton Baltimore in honor of the School of Medicine's pioneering physicians and scientists whose work impacts the lives of women and children around the world.

"This year's theme celebrates the innovators—the physicians, biomedical researchers and allied health professionals who are breaking boundaries and establishing Maryland as a medical powerhouse well beyond its borders," noted First Lady of Maryland Katie O'Malley, the honorary chair of the event.

A moving video that spotlighted work within the University of Maryland's School of Medicine was shared with a gathering of nearly 1,000 attendees and supporters.

"The School of Medicine conducts groundbreaking biomedical research, provides an innovative medical education, and delivers advanced care that makes a difference in the lives of those we train, those we treat and many others around the world, today and for generations to come," said Dean E. Albert Reece, MD, PhD, MBA.

The gala raised nearly half a million dollars, money that will provide critical funding for both translational research and clinical initiatives at the School of Medicine.

"It is with immense pride that I have witnessed the growth of our research enterprise," said Michael Cryor, chair of the School of Medicine Board of Visitors. "The School of Medicine has become a national leader in biomedical research, and its economic and health care impact is changing lives in profound ways. The School of



Following dinner and the program, the gala crowd was entertained by the sweet sounds of Mood Swings, lead by psychiatrist Jack Vaeth, Class of 1992. Gordon Feinblatt kindly sponsored the entertainment.

► BY BILL SEILER

A New Standard of Care

Stents as Effective as Surgery in Lasting Stroke Prevention for Blocked Neck Arteries

A NEW COMPARISON of the procedures to help prevent strokes by removing or relieving blockages in the arteries of the neck concludes they are equally effective at halting repeat blockage, according to a study led by School of Medicine researchers. Two years after treatment with either surgery or a minimally invasive treatment using wire coils called stents, the re-blockage rate remained the same, approximately six percent. Results of the analysis were detailed in a presentation at the American Stroke Association's International Stroke Conference in New Orleans.

"This was a huge surprise," said Brajesh K. Lal, MBBS, lead author and associate professor, Department of Surgery. "For years, surgery has been the standard of care to unclog the carotids."

The carotid arteries, located on each side of the neck, supply blood to the brain. Fatty material called plaque can partially or totally block blood flow through the arteries to the brain, which can then result in a stroke. Carotid artery blockages cause about 10 percent of strokes. Surgery or stenting preserves blood flow and lowers the risk of stroke.

"Physicians have been reluctant to utilize carotid artery stenting because of lessons learned from stenting in the coronary arteries, which lead to the heart," said Dr. Lal, who also serves as chief of vascular surgery at the Baltimore VA Medical Center. "Coronary blockages recurred 20–30 percent of the time after one-to-three years. The results of our study may help physicians and patients weigh the risks and benefits of these two carotid procedures along with medical management to come up with the best treatment options."

The study participants were part of the Carotid Revascularization Endarterectomy versus Stenting Trial (CREST). A previous CREST analysis showed no difference in the rates of stroke, heart attack or death among patients undergoing surgical removal of a blockage (carotid endarterectomy) or stenting.

In the new multi-center analysis, the largest to compare re-blockage rates after either procedure, 1,086 patients received stenting and 1,105 received endarterectomy. All were assessed at one, six, 12 and 24 months after the procedure with an ultrasound to identify those who had developed a 70 percent or greater blockage in the treated section.

After two years, the researchers found:

- Identical rates of recurring blockage (restenosis) at 5.8 percent after stenting and endarterectomy.
- Complete blockage (occlusion) in 0.3 percent after stenting and 0.5 percent after endarterectomy.

- Combined restenosis/occlusion in 6 percent after stenting and 6.3 percent after endarterectomy.
- Twenty stent patients and 23 endarterectomy patients had undergone a second procedure to open a re-blocked carotid.
- Rates of restenosis were about double in women and patients with diabetes and abnormal lipid levels.
- Stroke rates were 4 times higher in patients who developed a restenosis compared to those that did not develop a restenosis during follow-up.

"National research projects such as this confirm the value of efforts to determine what new tools and treatments will be of true benefit to patients," said Dean E. Albert Reece. "In this case, the data will help inform patient treatment that may help reduce the toll of stroke, which is the number four cause of death and the leading cause of adult disability in the United States."

Physicians participating in the study underwent standardized training and credentialing in the two procedures and the research protocol included a standardized way to measure restenosis. Monitoring of CREST participants will continue for 10 years.

Dr. Lal said this analysis is prompting physicians to re-think the role of stents to prevent stroke. Based on the coronary artery experience, a much higher rate of restenosis with stents had been expected. "Because you are leaving a foreign body behind in the artery and the artery is pulsating with every heartbeat, the belief was that with each of these pulsations the stent would perhaps irritate the artery and cause a reaction and restenosis."

Now, he said that theory can be modified, with the recognition that the size of an artery makes a big difference. Coronary arteries are very small, about two millimeters wide. "If the coronaries develop even a small layer of recurrence within them, it occupies 50–60 percent of the inside of the vessel (lumen), a significant loss. On the other hand, carotid arteries are three-to-five times the size of the coronary arteries, so you don't lose that much lumen," said Dr. Lal. "It's almost as if the carotid artery passage has so much more resilience, because it's got a lot of reserve, and if you lose a proportion of that channel, you still have enough blood flowing."

Prior to this study, Dr. Lal said the U.S. Food and Drug Administration had approved stenting for patients who were not good candidates for surgery. The FDA cited CREST in its approval of an expanded indication for use of the stent to include all patients with clogged carotid arteries who are at risk for stroke.

Funds for the study came from the National Institute of Neurological Disorders and Stroke and Abbott Vascular Solutions (formerly Guidant), which included donations of the Acculink and Accunet stent systems to most of the CREST study sites.



Brajesh K. Lal, MBBS

► BY KAREN ROBINSON

Outstanding Research—with Impact

Angela Brodie Recipient of 2012 Pharmacia-ASPET Award

Angela Hartley Brodie, PhD, a professor in the Department of Pharmacology & Experimental Therapeutics, is the recipient of the 2012 Pharmacia-ASPET Award for Experimental Therapeutics. This award is given annually to recognize and stimulate outstanding research in pharmacology and experimental therapeutics—basic laboratory or clinical research that has had, or potentially will have, a major impact on the pharmacological treatment of disease. The award is funded by an endowment from Pharmacia (now Pfizer) and by ASPET.

Dr. Brodie earned her PhD in Chemical Pathology from the University of Manchester, United Kingdom. After receiving her PhD, she received a fellowship from the NIH for postdoctoral training at Clark University and the Worcester Foundation for Experimental Biology in Massachusetts, where she became a staff scientist and later senior scientist. She would later join the University of Maryland as an associate professor in the Department of Pharmacology & Experimental Therapeutics in the School of Medicine. Now a full professor, she also has appointments in the Department of Physiology and at the University of Maryland Marlene and Stewart Greenebaum Cancer Center.

Dr. Brodie's major research interests are in breast cancer treatment and the development and use of aromatase inhibitors and new treatments for prostate cancer. She is an internation-



Dr. Brodie is being recognized for her life-saving cancer research.

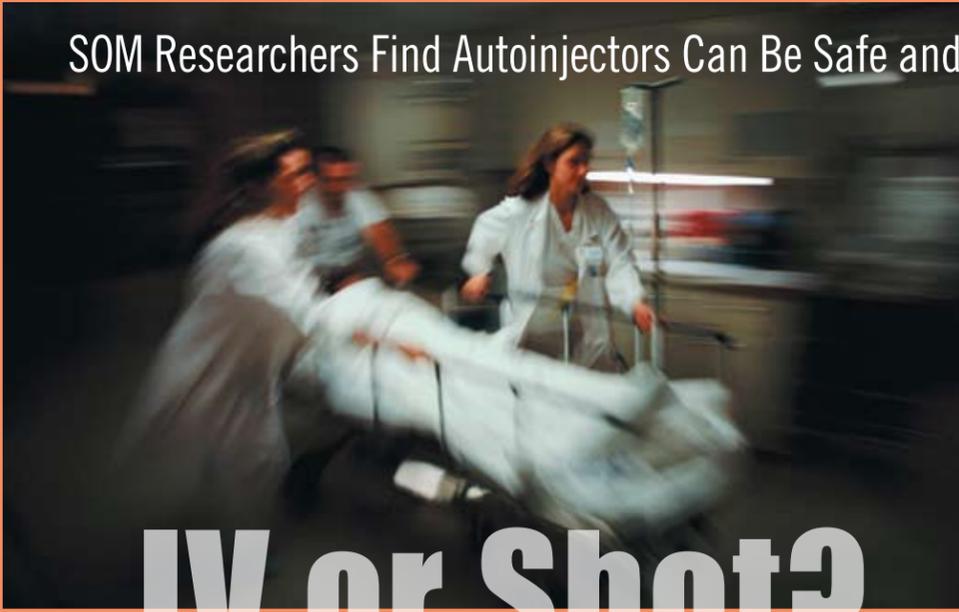
ally recognized scientist for her pioneering research on aromatase inhibitors for treatment of breast cancer. Her discoveries have provided hope for women who were previously unresponsive to widely accepted forms of breast cancer treatment. Her pioneering studies led to the development of aromatase inhibitors that are now approved by the FDA for treatment of breast cancer. She has expanded her research to investigate inhibitors of androgen synthesis as potential agents for treating prostate cancer.

As testimony to her major research accomplishments she has been awarded many of the leading cancer awards, including the Susan G. Komen Breast Cancer Foundation's Brinker International Award for Breast Cancer Research, the Landon Award from the American Association of Cancer Research, and the Kettering Prize from the General Motors Cancer Research Foundation. Dr. Brodie also is involved in the training of graduate students and postdoctoral fellows and teaches in medical and graduate pharmacology courses. She has served on many NIH and NCI study sections, as well as a reviewer and member of the integration panel for the U.S. Army Department of Defense Army Breast Cancer Program. She is also a member of the Advisory Board for the Komen Foundation.

Dr. Brodie will be presented the 2012 Pharmacia-ASPET Award for Experimental Therapeutics at the Annual Meeting of the American Society for Pharmacology and Experimental Therapeutics/Experimental Biology 2012 Meeting in San Diego, California, on April 21.

► BY SHARON BOSTON

SOM Researchers Find Autoinjectors Can Be Safe and Effective for Treating Prolonged Seizures



IV or Shot?

NATIONAL RESEARCHERS, including a team from the School of Medicine, have determined that administering seizure medication into a muscle using an autoinjector—similar to the EpiPen that's used to treat serious allergic reactions—is a faster and more effective way to stop status epilepticus, a prolonged seizure lasting more than five minutes. Status epilepticus is a potentially life-threatening emergency that causes 55,000 deaths each year, according to federal researchers. Results from the National Institutes of Health study were published in the February 16, 2012, edition of the *New England Journal of Medicine*.

“The first-line treatment for these dangerous seizures has been for paramedics to give anti-convulsant drugs intravenously (IV), but that can be hard to do when someone is having a seizure. The longer someone is having a seizure, the more likelihood there will be for brain damage or other complications. This research shows that giving an intramuscular shot is fast, reliable and effective, especially in patients having convulsions,” said study investigator Tricia Ting, MD, assistant professor, Department of Neurology.

The study, called the Rapid Anticonvulsant Medications Prior to Arrival Trial (RAMPART), compared two medicines known to be effective in con-

The first-line treatment for these dangerous seizures has been for paramedics to give anti-convulsant drugs intravenously (IV), but that can be hard to do when someone is having a seizure.

trolling seizures: midazolam and lorazepam. Midazolam was a candidate for injection because it is rapidly absorbed from muscle, but lorazepam must be given by IV.

The study found that 73 percent of patients in the group receiving the injected midazolam were seizure-free upon arrival to the hospital, compared to 63 percent of patients who received IV treatment with lorazepam. Patients treated with the injected drug were also less likely to require hospitalization than those receiving the IV medication. Both groups had similarly low rates of recurrent seizures.

RAMPART is the first randomized clinical trial to investigate whether intramuscular delivery of midazolam is as effective as IV lorazepam, the current standard of care therapy. The trial started in 2009 and completed enrollment in June 2011. RAMPART involved more than 79 hospitals, 33 emergency medical services agencies, more than 4,000 paramedics and 893 patients ranging in age from several months old

to 103 years old.

The network of investigators that designed and carried out the trial was established by the National Institute of Neurological Disorders and Stroke to conduct clinical trials on a variety of acute conditions affecting the brain such as stroke and traumatic brain injury. These investigators are organized into a system of 17 major research hospitals, such as the University of Maryland, each of which is linked to several community hospitals and other medical centers.

“The University of Maryland serves as a hub center for the Neurological Emergencies Treatment Trials network. With the positive results of the RAMPART study, we are eager to see how the combined resources of this network can advance research in other neurological conditions, such as stroke,” said Barney Stern, MD, professor, Department of Neurology.



Barney Stern, MD



Tricia Ting, MD

► BY CAELIE HAINES

Inspired

More than 200 guests gathered to honor the strides made in diversity at the School of Medicine at its fifth annual *Celebrating Diversity* reception and dinner held February 4 at the Marriott Inner Harbor at Camden Yards. The featured speaker was Vivian Pinn, MD, former Associate Director for Research on Women's Health and former Director of the Office of Research on Women's Health at the National Institutes of Health. Dr. Pinn gave an inspiring speech about how she managed to succeed in medicine despite a variety of challenges, including a childhood where segregation was still an ugly reality. She was the only woman and only minority in her medical school class at the University of Virginia School of Medicine. The event was also a fundraiser for scholarships that provide financial assistance to minority students, such as the Dean Emeritus Donald E. Wilson Endowed Scholarship Fund. Dr. Wilson served as dean from 1991 to 2006 and greatly increased the number of under-represented minorities among both the faculty and the student body.



Above left: L-R, Michael Cryor, Charlotte Jones-Burton, MD, and Stephen Bartlett, MD
Above right: Keynote speaker Vivian Pinn, MD, is presented a certificate of thanks by Otha Myles, MD, and Dean Reece.

The Miracle of Medicine [continued from page 1]



Medicine continues to be an economic engine for Maryland. Together, the School of Medicine and the University of Maryland Medical System produce \$5 billion in annual economic activity for our state and our region.”

“The University of Maryland School of Medicine has created a multi-disciplinary program that ensures a continuity of compassionate care from the first heartbeat through childbirth, infancy and beyond,” said Dean Reece. “These innovative and uniquely collaborative programs provide the most advanced treatment possible, providing hope for tomorrow, and making the miracles of medicine occur every day right here in Baltimore. Our team of specialists is sought after to provide consultation and care for the most complex and challenging cases, and we are excited to share these compelling stories with you.”

The Whiting-Turner Contracting Company was once again the presenting sponsor of this annual event. Platinum Sponsors included PNC Bank, the University of Maryland Medical System and the Law Offices of Peter G. Angelos. Silver sponsors included Baker Hostetler, LLP, Mr. and Mrs. Frank Carlucci, Kelly Benefit Strategies, Mercy Medical Health Services, M&T Bank and University of Maryland Faculty Physicians, Inc. Bronze sponsors were the Banks Contracting Company, Inc., BD Diagnostics, Bevel Design, Mahogany, Inc., MedStar Health, the University of Maryland Baltimore Foundation, Inc. and the University System of Maryland Foundation, Inc.

Match Day 2012



The best thing about Match Day? The unbridled joy, as students like Kristen Schratz get the news they wanted. She's going to NYC for a Pediatrics residency at New York Presbyterian Hospital-Columbia University.

PHOTO OF THE MONTH



Petunias, Sherwood Gardens in the Guilford area of Baltimore City
Photo by: Tom Jemski,
Photographer
Office of Public Affairs

Call for Photos!

Send in photos of your favorite spring activity for the next *Call for Photos*. To participate, submit your photograph(s) to photos@som.umaryland.edu by May 1, 2012.

◀ **It's a match!** Once a year, the long-awaited day arrives. And on Friday, March 16, the Class of 2012 discovered where they—along with fourth-year medical students around the country—will pursue the next step in their medical careers. The National Resident Matching Program (NRMP) conducts the event using a computer algorithm that aligns the preferences of applicants with the preferences of residency programs in order to fill thousands of training positions at U.S. teaching hospitals. This year, the University of Maryland's 151 students matched at 70 hospitals in 27 states.

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Program in Personalized and Genomic Medicine

OPEN HOUSE

May 8, 2012

2:00 pm–6:00 pm

MSTF Auditorium

Reception to follow program

For more information and to register, contact Rhea Cosentino, program manager, at x6.1078 or rcosenti@medicine.umaryland.edu.



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