



SOM *news*

Point of PRIDE



Carol O. Tacket, MD

In 1997, at UMSOM's Center for Vaccine Development, Dr. Tacket, a Professor of Medicine, directed the **first human trial that proved that an edible vaccine was feasible by stimulating an immune response in the test subjects who ate pieces of genetically modified potato.**



DEAN'S MESSAGE

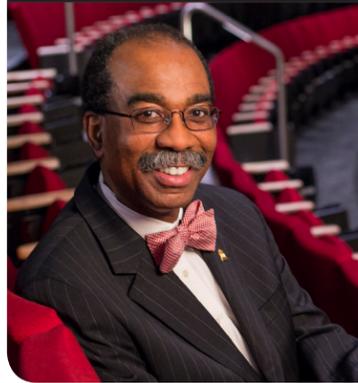
I always look forward to greeting and getting to know our new students, faculty, and staff during this time of year. Autumn brings fresh goals, fresh perspectives, and fresh motivation, yet we remain committed to productive, ongoing efforts like the Culture Transformation Initiative (CTI). The CTI enforces the School of Medicine's dedication to cultivating our culture as a national model for a respectful, inclusive, and professional work environment. I recently welcomed all our new medical students, the Class of 2023.

In addition to a majority representation of women among our entering classes, the Bressler Research Building's new lobby commemorates some of the most remarkable women in our medical and scientific history. I look forward to the conversations, reminiscences, and inspiration that this exhibit will elicit.

One of my favorite parts about welcoming new members of our community is learning the varying interests and areas of our profession that stir their skilled and investigative minds. For our new colleague and Professor of Pediatrics, **Allan Doctor, MD**, that includes blood function as it relates to critical illnesses. **Dr. Doctor leads the new Center for Blood Oxygen Transport & Hemostasis** and the effort to develop an artificial blood product for trauma settings, like battlefields or rural areas with limited access to donated blood for transfusions. This new research center and Dr. Doctor's leadership bring the promise of critical advances in the field of hematology.

Many rural communities in the United States experience an extreme lack of health care, including here in Maryland. The fact that so many of our neighbors live without access to the same health resources and conveniences that we are so privileged to have is unacceptable. This summer we received a new opportunity to address this need with the support from our partner, the Health Resources and Services Administration (HRSA), who awarded our Department of Family and Community Medicine a three-year grant to establish a residency program in rural Eastern Shore communities.

What's on My Mind...



...is the genuine enthusiasm I sense among the School of Medicine community for the new academic year.

PLEASE ATTEND *the* 2019 STATE of the SCHOOL ADDRESS

Wednesday, October 30 in Leadership Hall

I am eager to highlight many more activities, accomplishments, and milestones at this year's **State of the School Address on October 30 in Leadership Hall at 3:30 pm**. Our theme will be "Visionary Vanguard." The stories we are sharing this year will highlight our commitment to education, research, and clinical care, which has led to record-breaking funding and history-making innovations. I encourage everyone to attend and support your colleagues and peers who will share their roles in the School of Medicine's charge to transform our culture while shaping the future of medicine.

Please also mark your calendars for the **Festival of Science on November 21 in Leadership Hall from 8:30 am-4 pm**, where we will focus on some of our interconnected global health research initiatives. I invite you to join and support each other during this riveting day of research and discovery. Together, we will kick off what I know will be another exceptional academic year.

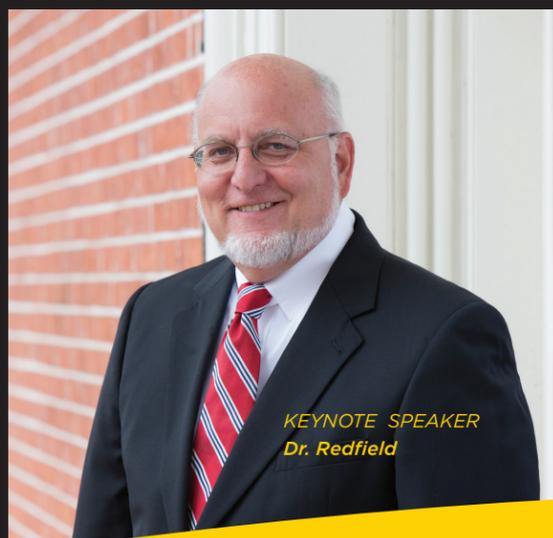
In the relentless pursuit of excellence, I am Sincerely yours,

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

SOMnews is your source for all news and information regarding the University of Maryland School of Medicine, including Clinical Care, Research, Education, Community Outreach, and its Culture Transformation Initiative.

What's Inside...

- 2 Heart and Stroke Programs Recognized
- 4 Unlocking Secrets to Microbiomes and Mosquito-Borne Diseases
- 6 UMSOM Rural Residency Program
- 8 Mini-Med School for Kids a Success
- 10 Wear Your UMSOM Pride



KEYNOTE SPEAKER
Dr. Redfield

The SOM FESTIVAL of SCIENCE

NOVEMBER 21, 2019
LEADERSHIP HALL

This year's theme will be "Global Health Research," featuring presentations from scientists at the UMSOM's Center for Vaccine Development and Global Health (CVD) and Institute of Human Virology (IHV), with lunch and a reception following the last presentation.

The event's keynote speaker will be Dr. Robert Redfield, Director of the Centers for Disease Control and Prevention (CDC). Before joining the CDC in March 2018, Dr. Redfield was a tenured professor of Medicine and Microbiology at UMSOM, and a co-founder and associate director of the IHV. A renowned infectious disease expert, he is known for his pioneering contributions to the understanding of HIV/AIDS.

Quality Achievement Award

RECOGNIZES

COMMITMENT TO OUTSTANDING STROKE CARE



Marcella Wozniak, MD, Associate Professor of Neurology

The Comprehensive Stroke Center (CSC) at the University of Maryland Medical Center (UMMC) has received the American Heart Association/American Stroke Association’s Get With The Guidelines® (GWTG) Target: Stroke Honor Roll Elite Plus Gold Plus Quality Achievement Award. The award recognizes the Center’s commitment to ensuring stroke patients receive the most appropriate treatment according to nationally recognized, research-based guidelines based on the latest scientific evidence. The center is staffed by faculty from the Department of Neurology’s Stroke Division at the University of Maryland School of Medicine (UMSOM).

“Our center is dedicated to improving the quality of care for our stroke patients by implementing the American Heart Association’s Get With The Guidelines-Stroke initiative,” says Seemant Chaturvedi, MD, the Stewart J. Greenebaum Endowed Professor in Stroke Neurology at UMSOM and Director of the Stroke Program at the University of Maryland Medical System (UMMS).



“The tools and resources provided help us track and measure our success in meeting evidence-based clinical guidelines developed to improve patient outcomes.”

- Dr. Chaturvedi

The Center earned the award by meeting specific quality achievement measures for the diagnosis and treatment of stroke patients at a set level for a designated period. Target: Stroke Honor Roll-Elite Plus means that the Center has met the standard for time between the patient’s arrival at the hospital and treatment with the clot-buster tissue plasminogen activator, or tPA, the only drug approved by the U.S. Food and Drug Administration to treat ischemic stroke, which is within 60 minutes in 75 percent or more of acute ischemic stroke patients treated with IV tPA and time to thrombolytic therapy within 45 minutes in 50 percent of acute ischemic stroke patients treated with IV tPA. Gold Plus means the CSC has met 24 consecutive months of achievement measures in GWTG.

These measures include evaluation of the proper use of medications and other stroke treatments aligned with the most up-to-date, evidence-based guidelines with the goal of speeding recovery and reducing death and disability for stroke patients. Before discharge, patients should also receive education on managing their health, get a follow-up visit scheduled, as well as other care transition interventions.

“Stroke can be a complex and challenging condition. At the CSC, we are continually striving to provide the best and most advanced care to our stroke patients. We are honored to receive this prestigious designation,” says Karen Yarbrough, DNP, ACNP-BC, CRNP, Director of the UMMC Comprehensive Stroke Center.

“Our nationally designated Comprehensive Stroke Center is among the busiest in the Mid-Atlantic region in providing high-acuity, emergent care,” said Peter Crino, MD, PhD, Professor and Chair of UMSOM’s Department of Neurology. “This award greatly validates the efforts of our highly talented CSC team in their daily efforts to perform complicated and often life-saving procedures.”

Earlier this year, UMMC was again awarded the Joint Commission’s Advanced Certification as a Comprehensive Stroke Center, reinforcing its position as one of nation’s top programs to treat the most complex stroke patients. The two-year designation is awarded to fewer than 70 elite stroke centers in the nation.

“This is another tremendous accomplishment for our faculty-physicians in UMMC’s Comprehensive Stroke Center.”

- Dean E. Albert Reece, MD, PhD, MBA



**BEST
CHILDREN'S
HOSPITALS**

U.S. News & WORLD REPORT

**CARDIOLOGY &
HEART SURGERY
2019-20**

One of Nation's Best

IN PEDIATRIC CARDIOLOGY AND HEART SURGERY

The Children's Heart Program at the University of Maryland Children's Hospital (UMCH) is once again ranked among the nation's top 50 pediatric cardiology and heart surgery centers, according to the 2019-2020 edition of the U.S. News & World Report Best Children's Hospitals. There are nearly 200 qualified pediatric centers in the country.

Among children's hospitals nationally, the Children's Heart Program at UMCH ranks 32nd, moving up 9 positions from last year, when the program was ranked for the first time at 41st in the nation.

"It is an honor for our Children's Heart Program to be recognized a second time as being among the very best in the nation," says **Steven J. Czinn, MD**, Chair of the Department of Pediatrics at the University of Maryland School of Medicine (UMSOM) and Director of UMCH. *"We have an immensely talented, innovative team of doctors, nurses and staff who constantly challenge themselves to take the care we provide to a whole new level. It is because of their collaborative and pioneering spirit that this program has been so successful in caring for children with heart disease."*

The ranking demonstrates sustained excellence across the entire University of Maryland team in caring for children with complex, serious and life-threatening illnesses. The process is rigorous, looking at how well programs score on a number of quality measures and reviewing participation in efforts to continuously improve care.

The ranking process included a comparison of pediatric-cardiac surgical outcomes at UMCH with similar programs across the United States, using data from the Society of Thoracic Surgery Congenital Heart Surgery Database.

The Children's Heart Program at UMCH has seen some medical marvels this past year. One-year-old Tessa Agnoli received a heart transplant earlier in

2019, the youngest patient to have one at UMCH. Also this year, 12-year-old Lindsey Le had a double lung-heart transplant, a surgery that is rarely performed across the nation.

The program was evaluated not only on the expertise of individual caregivers, but also on the support provided by the University of Maryland Medical Center across the clinical spectrum, from surgery and intensive care to the catheterization and electrophysiology labs, to echocardiography and advanced imaging. The ranking process looked at research efforts at UMSOM, and the work with hospitals throughout the 13-hospital University of Maryland Medical System.

The process also evaluated other key areas that must work together to ensure the best results for some of the most vulnerable and tiny patients, including nursing, social work and child life services, neonatal and pediatric intensive care, anesthesiology, and pharmacy.

The University of Maryland Children's Hospital at the University of Maryland Medical Center (UMMC) is recognized throughout Maryland and the mid-Atlantic region as a resource for critically and chronically ill children. UMCH physicians and staff excel in combining state-of-the-art medicine with family-centered care. 



Learn more about the Children's Heart Program at www.umms.org/childrens/health-services/pediatric-cardiology

The Vaginal Microbiome Can Elicit Resistance or Susceptibility to Chlamydia



The vaginal microbiome is believed to protect women against *Chlamydia trachomatis*, the etiological agent of the most prevalent sexually transmitted infections (STIs) in developed countries.

New research by the University of Maryland School of Medicine (UMSOM) shows how the microbiome can either protect or make a woman more susceptible to these serious infections.

The research is important amid a rising number of cases of chlamydia worldwide. In the U.S. alone, 1.7 million cases of chlamydia were reported in 2017, a 22 percent increase since 2013, according to data from the Centers for Diseases Control and Prevention (CDC).

“Chlamydia is a major growing health issue in the U.S., and more work is needed to understand why some women are apparently naturally protected while others are not,” commented Jacques Ravel, PhD, Professor of Microbiology and Immunology, Associate Director and Senior Scientist at the Institute for Genome Sciences (IGS) at UMSOM.

1.7 million cases of chlamydia were reported in the U.S.

Dr. Ravel is also a Principal Investigator for this research. **“Our novel research aims to decipher the mechanistic and functional underpinnings of communication between the host and the cervicovaginal microbiome to better understand resistance and susceptibility to this infection.”**

While *Lactobacillus*-dominated microbiota in a woman’s vagina has long been suspected to provide a protective barrier against STIs like chlamydia, investigators at IGS and the University of Maryland School of Dentistry (UMSOD) are reporting for the first time a mechanism enabling specific types of cervicovaginal microbiome to predispose cells in the vagina and cervix to resist chlamydial infection.

“We will now be able to leverage these microbiomes to identify women at risk of infections, but more importantly to develop improved strategies to restore an optimal protection when it is lacking. Unlike our genes, the vaginal microbiome can be modulated to increase protection against chlamydia, but also against other sexually transmitted infections, including HIV,” said Dr. Ravel of the research, which was published in *mBio*, “Cervicovaginal Microbiota-Host Interaction Modulates *Chlamydia trachomatis* Infection.”

The investigators have shown previously that five major types of vaginal microbiome exist, four of which are dominated by a different species of *Lactobacillus*, while the fifth has very low numbers of *Lactobacillus* bacteria and is associated with an increased risk of adverse outcomes, including STIs such as HIV and even premature births.

The current research showed that *Lactobacillus iners*, a bacterium actually commonly found in the vagina, did not optimally protect human cells against chlamydial infection, while products of *Lactobacillus crispatus*, another *Lactobacillus* species frequently found in the vagina, did.

Patrik Bavoil, PhD, Professor & Chair, Department of Microbial Pathogenesis, UMSOD, a well-known expert in *C. trachomatis* biology and pathogenesis, is a Co-Principal Investigator with Dr. Ravel on the NIH funding that supported this study. The investigators also collaborated with Larry Forney, PhD, at the University of Idaho. 

This research was supported by the National Institute for Allergy and Infectious Diseases (NIAID) of the National Institutes of Health (NIH) under award numbers U19A1084044 and UH2A1083264.



Dr. Ravel

Taking the Bite OUT of Mosquito- Borne Diseases

While only 6 millimeters long, the tiny mosquito continues have a huge impact on global health, bearing diseases like malaria, dengue, and yellow fever that cause millions of deaths worldwide, especially in the world's most vulnerable populations. But now, researchers at the University of Maryland School of Medicine (UMSOM) have begun testing an experimental vaccine that is designed to protect against a series of these diseases.

The experimental vaccine is important, as no vaccine to date offers full protection against malaria, which alone impacts more than 200 million people a year, according to the World Health Organization (WHO).

Researchers at the UMSOM Center for Vaccine Development and Global Health (CVD) have begun a Phase 1 clinical trial for an experimental vaccine called AGS-v PLUS, which targets proteins in mosquito saliva. This randomized, double-blind, placebo-controlled clinical trial will test safety and immunogenicity among small groups of healthy volunteers.

According to **Matthew Laurens, MD, MPH**, Associate Professor of Pediatrics and Principal Investigator for the clinical trial, the current vaccine follows an earlier four-peptide version of the vaccine tested at the National Institute of Allergy and Infectious Diseases (NIAID), part of The National Institutes of Health (NIH). The current AGS-v PLUS vaccine that UMSOM CVD is testing includes five peptides in efforts to train the immune response to recognize and target components of mosquito saliva, which may prevent diseases carried in mosquito spit glands. These diseases are transmitted to humans when mosquitoes bite and use their saliva to lubricate human skin and facilitate mosquito ingestion of human blood. Additionally, the vaccine may also reduce the lifespan of the mosquito that bites the vaccinated person.

“The concept that one vaccine can simultaneously impact multiple diseases carried by mosquitoes has huge potential implications for global health. Diseases carried by mosquitoes disproportionately affect the impoverished, and frequently resurface and resurge due to environmental conditions that may relate to climate change. An effective tool to combat these deadly diseases could prevent around 700,000 deaths annually,” said Dr. Laurens.

AGS-v PLUS, is developed by Imutex Limited, a joint venture between two UK-based companies, SEEK and h-VIVO. The clinical trial is currently funded by the Department of Health and Social Care in the U.K. and sponsored by the National Institutes of Health. The study is actively recruiting participants for a blinded controlled trial. Participants will be enrolled for approximately 12 months. The study population includes healthy adults aged 18 to 50 years old.

For over 40 years, UMSOM CVD researchers have worked domestically and internationally to develop, test, and deploy vaccines to aid the world's underserved populations. As an academic enterprise, UMSOM CVD is engaged in the full range of infectious disease intervention from basic laboratory research through vaccine development, pre-clinical and clinical evaluation, large-scale pre-licensure field studies, and post-licensure assessments. 

Children under the age of five account for 61 percent of all malaria deaths worldwide and continue to be the most vulnerable group affected by this disease.



Dr. Laurens

UMSOM Rural Residency Program

ADDRESSES GROWING SHORTAGE OF PRIMARY CARE PROVIDERS

IN RURAL
MARYLAND
COMMUNITIES

In July, University of Maryland School of Medicine (UMSOM) **Dean E. Albert Reece, MD, PhD, MBA**, and **David Stewart, MD**, Associate Professor and Chair of the Department of Family and Community Medicine, jointly announced that the federal Health Resources and Services Administration (HRSA) awarded a \$750,000 grant to establish a residency program in Maryland's rural Eastern Shore communities.

This grant is part of a larger \$20 million multi-year initiative by HRSA to expand the physician workforce in rural areas by developing new, sustainable residency programs in family medicine, internal medicine, and psychiatry. The recipients of the awards include rural hospitals, community health centers, health centers operated by the Indian Health Service, Indian tribes or tribal organizations, and schools of medicine.

The goal of the UMSOM program is to develop a sustainable, accredited rural training track in Caroline, Dorchester, Kent, Queen Anne's and Talbot counties on Maryland's Eastern Shore, and to ultimately expand the area's rural primary care workforce. *"This program will help create a pipeline for expanding the physician workforce in rural, medically underserved areas on Maryland's Eastern Shore,"* said Dr. Stewart.

A key aspect of the program involves strong partnerships with University of Maryland Shore Regional Health and the Choptank Community Health System. Residents in the rural track program will complete their first year of training in Baltimore and their final two years in medical practices and other clinical settings offered by these two health care organizations.

Addressing the needs of underserved communities in Maryland is a core goal of the University of Maryland, Baltimore.

"We are grateful for this generous support from the Health Resources and Services Administration. It is extremely important for us to generate and sustain interest in this new rural residency program. I believe we will do so, because that is part of our mission here at the School of Medicine: to improve the health of all the citizens of Maryland."

- Dean E. Albert Reece, MD, PhD, MBA

Officials Announce New HRSA Grant to Establish UMSOM Rural Residency Program



Dr. Ramirez is the Principal Investigator for the Program

Officials from collaborating institutions, Shore Regional Health and Choptank Community Health System, highlighted the importance of the program for Maryland's five-county Eastern Shore region. *"The HRSA grant will be of great value to Shore Regional Health as it helps us attract and retain primary care providers to the five-county rural region we serve,"* said Ken Kozel, MBA, FACHE, President and CEO of UM Shore Regional Health. *"We are very excited to work with the University of Maryland School of Medicine and our regional partners, Choptank Community Health System and Eastern Shore Area Health Education Center, to realize the full potential that this primary care physician grant offers to SRH and to our community."*

Sara Rich, MPA, President and CEO of Choptank Community Health System, agreed that the HRSA-funded program is a critical step toward attracting primary care physicians to the most rural parts of the Eastern Shore. *"Choptank Community Health is proud to be a partner in this groundbreaking grant award from the Health Resources and Services Administration. We look forward to collaborating with our partners at UMSOM, UM Shore Regional Health, and the Eastern Shore Area Health Education Center as we work together to bring more primary care physicians to our rural communities,"* said Ms. Rich.

The HRSA funding will be used to help recruit and train dedicated teaching faculty for the program, to recruit a diverse pool of primary care residency applications that reflect a demonstrable interest and dedication to the practice of rural health, and to develop and secure a clear and viable plan to sustain the rural residency program. Jason Ramirez, MD, Assistant Professor in the Department of Family and Community Medicine, is the

Principal Investigator for the program. Over time, the program will include 12 residents, he said. *"Our goal is to achieve full accreditation and to recruit highly qualified medical students with track records of interest and dedication to practicing primary care in rural Maryland,"* said Dr. Ramirez.

The sustainability of the program will also rely on support from the Maryland Department of Health as well as key organizational support from UM Shore Regional Health and Choptank Health. *"As a physician myself, I know it's important to train physicians in rural areas because many physicians consider staying in practice in the communities where they trained. This HRSA grant will help our shortage of physicians on the Eastern Shore of Maryland,"* said U.S. Representative Andy Harris (R-MD).

With assistance from the Eastern Shore Area Health Education Center (ESAHEC), the success of the program will be evaluated by tracking the number of family physicians retained in the five-county region, their practice locations, scope of practice, and specific populations served.

"This grant is a huge win for our state — it will improve access to medical care for thousands of Marylanders and expand residency opportunities for physicians-in-training throughout the Eastern Shore. That's why I've consistently fought for funding for this program and others that improve the availability of health care services and bolster the pipeline of physicians practicing in rural areas. I will continue working to ensure communities across our state have affordable, reliable health care options," said U.S. Senator Christopher Van Hollen, (D-MD), a member of the Senate Appropriations Committee. 



TUITION-FREE LECTURE SERIES



Celebrates Graduation

BALTIMORE CITY YOUTH SPEND
SUMMER AT UMSOM LEARNING
ABOUT HEALTH AND SCIENCE



This year as in the past, University of Maryland School of Medicine (UMSOM) faculty delivered engaging talks about health and science to local city youth as part of the Mini-Medical “Min-Med” School for Kids Program. Offered as a public service since 2001, Mini-Med School is a tuition-free lecture series provided by UMSOM faculty, during which the lay public learns about diseases and their prevention. Established through a collaboration with the Salvation Army’s Boys and Girls Club of Franklin Square, the Mini-Med School for Kids Program has reached over 600 children since its inception in 2008.

For five consecutive weeks, students spent the summer learning about heart health, bleeding emergencies, nutrition, substance abuse, physical activity safety, concussions, and seatbelt safety through kid-friendly interactive sessions held at UMSOM, the University of Maryland Medical Center, and the University of Maryland, Baltimore’s University Recreation & Fitness (URecFit) facility.

The 2019 program ended with a class taught by five UMSOM Master of Public Health (MPH) students. The students encouraged the graduates to become public health advocates in their own communities and consider careers in health and science. These presentations concluded with a special ceremony in which each “graduate” was presented with a graduation certificate from **Dean E. Albert Reece, MD, PhD, MBA**.

“Imagine yourselves finding cures to diseases and helping those in need in your communities,” said Dean Reece. *“Imagine yourselves standing out and being the best. The possibilities are endless when you work hard and*

dream BIG!”

Dr. Baker-Smith



2019 MINI-MED SCHOOL FOR KIDS FACULTY PRESENTERS

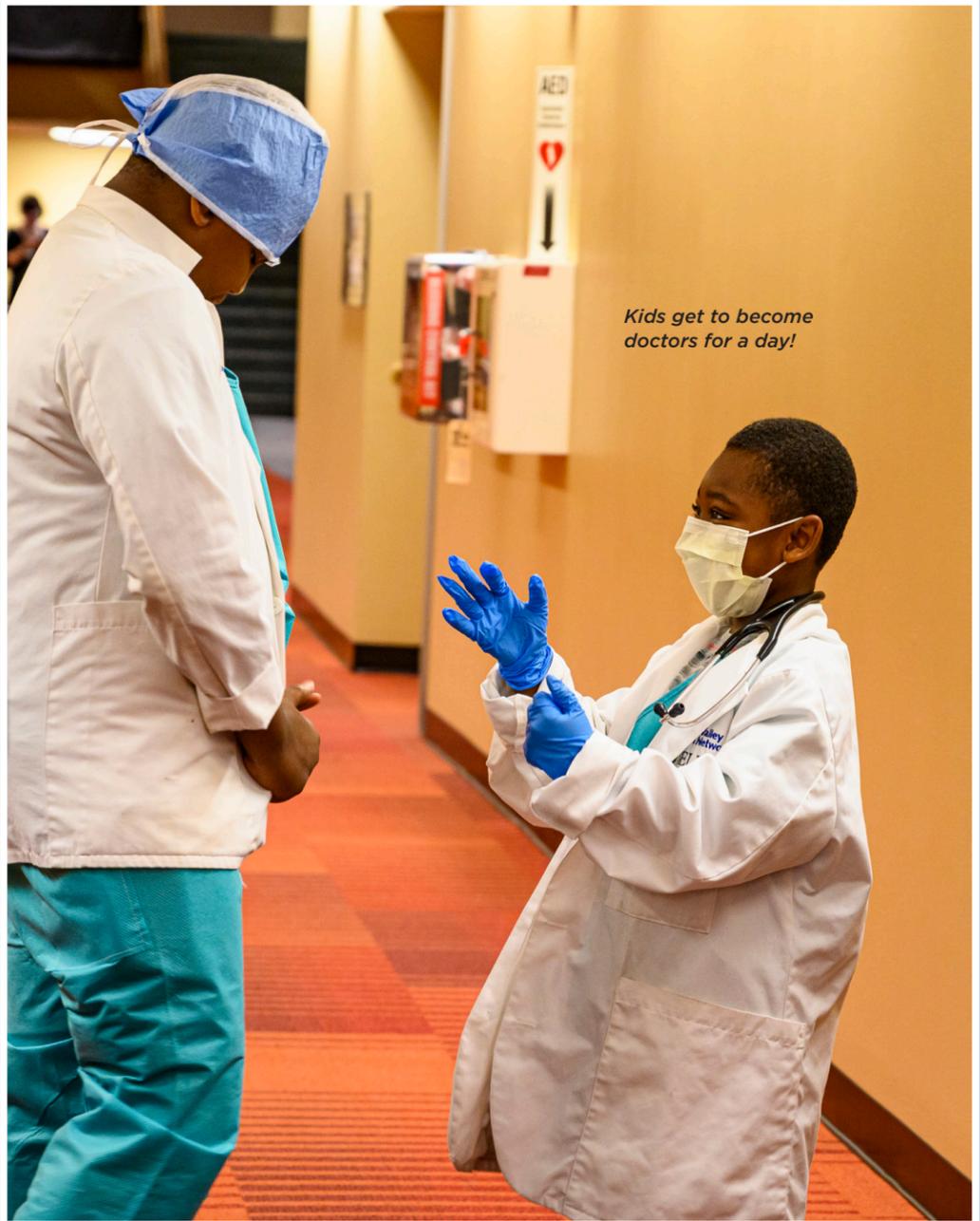
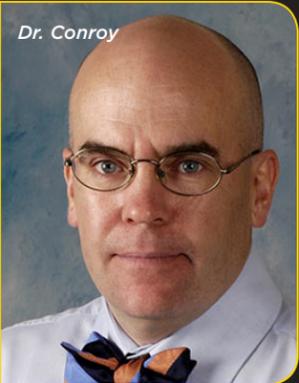
This year's UMSOM faculty presenters included Carissa Baker-Smith, MD, MS MPH, Assistant Professor of Pediatrics; Aronica Cotton, MD, Associate Professor of Psychiatry; Vincent Conroy, PT, DScPT, Assistant Professor of Physical Therapy and Rehabilitation Science.

Suzanne Burgess and Jennie Hager, Dental Hygienists from the University of Maryland School of Dentistry also taught the students about oral hygiene.

Dr. Cotton



Dr. Conroy



Kids get to become doctors for a day!



8,000+

LOCAL COMMUNITY MEMBERS HAVE PARTICIPATED IN UMSOM MINI-MED SCHOOL PROGRAMS.





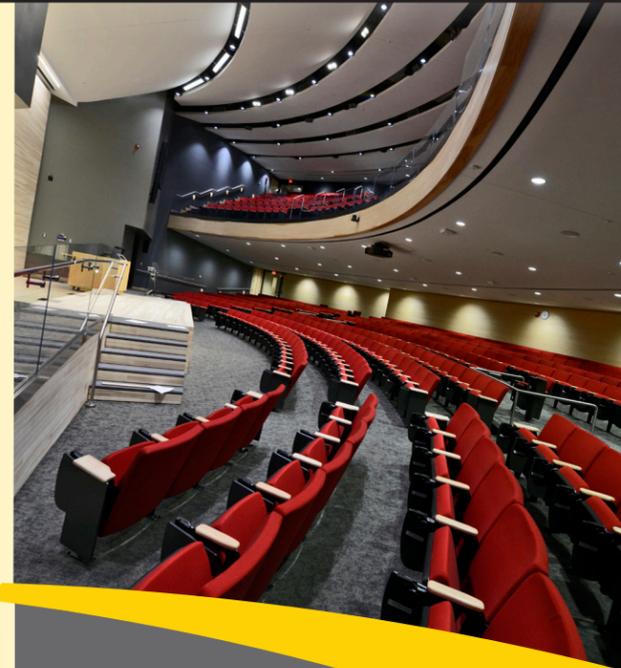
This fall, stay warm and show your school spirit!

\$42.98



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Purchase UMSOM apparel and accessories from the UMB Bookstore at the SMC Campus Center or order online at umb.bnccollege.com



Join Dean Reece and the UMSOM Community

AT THE 2019 STATE OF THE SCHOOL ADDRESS

3:30PM LEADERSHIP HALL RECEPTION TO FOLLOW IN THE MSTF ATRIUM

685 W. BALTIMORE STREET

SOMPride

POLICY STATEMENTS:

All UMSOM clinical faculty members, residents, fellows, and students are required to wear white coats in all clinical settings — hospital or outpatient “practices.”



Clinics “Practices”

UMSOM policy requires all patient care facilities to be called “practices.”

We appreciate your cooperation.

SOMnews is produced by the University of Maryland School of Medicine Office of Public Affairs

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