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PHILANTHROPY IN ACTION AT UNIVERSITY OF VIRGINIA HEALTH SYSTEM

Neuroscientist John Lukens, clinical psychologist Micah Mazurek, and developmental pediatrician Rich Stevenson (l to r) are part of UVA's multidisciplinary team working toward a better understanding of autism.

PHOTOGRAPH © PEGGY HARRISON

RETHINKING AUTISM—FROM ALL ANGLES

UVA Comes Together to Improve Care for Children

AN ASTOUNDING 126,000 VIRGINIANS ARE affected by autism spectrum disorder, a complex developmental condition often marked by repetitive behaviors and challenges in social interactions and communication. Approximately one in 68 Americans fall somewhere along the autism spectrum. But what if we could decipher the fundamental causes of autism and find new ways to predict and treat the disorder? That's the ultimate goal at UVA, where leading researchers at UVA Brain Institute are probing the neurological origins of autism. And, while these researchers search for biological answers, other teams across the University are coming together to offer better, more coordinated care for patients and their families.

A new cross-disciplinary Center for Autism will bring together clinicians, educators, and researchers from UVA Brain Institute, UVA Children's Hospital, the Curry School of Education, and other partners across UVA to tackle the issues of autism. The community-based Virginia Institute of Autism will also partner in the effort.

"The challenges of autism are so enormous and so complex that no single entity or individual can tackle it alone," says Jaideep Kapur, MD, director of UVA Brain Institute. "We need to approach it from multiple ways—from finding the brain mechanisms involved and understanding why certain children are more susceptible to autism, to figuring out the best interventions to help these children achieve their potential."

Targeting some of those interventions is a priority for UVA Children's Hospital, home to skilled developmental pediatricians and experts

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> *By working together, we stand to make the greatest possible impact.*

IN THIS ISSUE

TAKING PREVENTION ON THE ROAD

New HPV Self-Collection Kits Could Save Lives

WHAT IF IT WERE POSSIBLE TO TEST for a deadly disease at home, without a trip to the doctor's office? Would that encourage more people to get tested, leading to earlier detection and possibly saving lives?

That's the idea behind the latest efforts of assistant nursing professor Emma Mitchell, PhD (Nurs '08, '11). Mitchell is working to ensure that more women, especially those in rural areas, have access to testing for the most dangerous strains of human papilloma virus (HPV)—those that can lead to cervical cancer. In the past year, inexpensive HPV self-collection tests have shown tremendous promise in pilot studies.

"Quickly caught, cervical cancer is quite treatable," says Mitchell. "It's when it goes undetected that it becomes deadly. We're hoping that taking the tests and our message on the road will help make it less so."

During the past two summers, Mitchell has paired cervical cancer screenings with mammography appointments for women who receive care at a Remote Area Medical (RAM) Clinic and through UVA's traveling mammography van. Now, a new gift from Pat (Nurs '69) and Keith Woodard (A&S '71, Dard '75) will help Mitchell reach even more rural women with the self-collection tests. Previous funding from UVA Cancer Center allowed Mitchell and her students to train "lay navigators" to visit rural women and explain how to use the kits. With the Woodard gift, Mitchell and her team hope to recruit 70 more women to take the self-collection tests in regions of Virginia especially hard hit by cervical cancer.

The statistics are sobering: Between 15 and 16 percent of rural women tested positive for high-risk strains of HPV in the groups already seen by Mitchell and her navigators. While the HPV vaccine has improved infection rates in the U.S., women who aren't eligible for the vaccine, or who lack access to good primary care, aren't so lucky. In many rural areas, including Southwest Virginia, cervical cancer deaths are a quarter to a third higher than elsewhere in the state.

PHOTOGRAPH © COE SWEET

Assistant nursing professor Emma Mitchell trains CNL students like Audrey Doede (left) in preventive care for rural women.

The Woodards' gift meets an immediate need and strengthens a federal funding proposal that could have even greater implications.

"We're really passionate about helping underserved populations in rural areas," says Pat Woodard. "This project is a perfect fit for how we want to make a difference." ●

Rethinking Autism—continued from page 1

in neurodevelopmental disabilities and autism. Each year, these physicians care for approximately 2,000 children with mild to severe autism. Early diagnosis and intervention aids immensely in developing communication and social skills and improving overall quality of life. A nationwide shortage of clinical professionals in autism, however, is currently forcing some children to be put on waitlists for assessment and treatment, potentially affecting their chances of better outcomes.

"We're in the midst of what some consider an epidemic of autism," says Richard Stevenson, MD, head of the Division of Developmental Pediatrics at UVA Children's Hospital. "There are a lot of unknowns in how to best diagnose autism across all levels of severity, and the best way to care for each individual. This is a great opportunity to improve clinical care and to increase our knowledge about the disorder through research."

UVA Children's Hospital plans to tackle the shortage problem by expanding its fellowship program in developmental pediatrics to train more doctors to care for children with autism. Many of these children also live with other disabilities—such as cerebral palsy, Down syndrome, and attention deficit hyperactivity disorder (ADHD)—and require multiple specialists. This creates a complex maze of care for families, with few resources to guide them. The Center for Autism will also create a family resource navigator team to improve access to services and coordinate appointments at UVA and within the community.

"Training a corps of future doctors, teachers, and other experts is critical to this initiative," emphasizes Kapur. "By working together, we stand to make the greatest possible impact." ●

KEN WALSH, PHD

Lockhart B. McGuire Professor of Internal Medicine

PHOTOGRAPH © JACKSON SMITH

WHY DO SOME PEOPLE WITH EXCELLENT HEALTH HABITS still end up having heart attacks? Why do others who feast on junk food and never lace a sneaker live into their 80s and beyond? The answer to these questions may lie deep within our bones, where blood cells are born. It turns out that, as we age, these immature blood cells become genetically altered and grow uncontrollably as clones, wreaking havoc on the cardiovascular system. Scientists are hard at work trying to identify what triggers the rogue cells to undergo this clonal growth process, which is surprisingly frequent in elderly individuals. One man at the forefront of this emerging science is Ken Walsh, PhD, who directs the School of Medicine's Hematovascular Biology Center. Here's a deeper look into Walsh's research in clonal hematopoiesis of indeterminate potential, or simply "CHIP."

Q: CAN YOU BRIEFLY SUMMARIZE YOUR RESEARCH?

A: We're looking at how mutations that accumulate with age within immature blood cells lead to an uncontrolled multiplying process that could be an important contributor to many chronic diseases, especially cardiovascular disease and stroke. Currently, the increase in these diseases and others as we age is considered to be unmodifiable. But, if we are right, it could be possible to identify and combat these age-dependent mutations within the cells that are responsible for the nonstop clonal growth. Already, we are studying one of the top mutated "driver" genes detected in white blood cells, which also shows a link to common blood cancers like leukemia.

Q: WHAT'S THE POTENTIAL FOR PATIENTS?

A: If we can identify the genes involved, then it becomes possible to develop a simple blood test that can more accurately predict who is at a greater risk for developing various age-related diseases. In turn, this could trigger preventive measures. As we continue to identify the genetic mutations involved in CHIP, we open the door to finding precise therapies to address them, potentially within drugs that are already on the market for other uses. Precision medicine, based on a molecular understanding of the genetic mechanisms at work, can help us specifically target the exact mutations causing the cells to clonally expand.

Q: WHAT ARE YOUR NEXT STEPS?

A: We are just at the tip of the iceberg. Currently, we are getting involved in clinical studies. For example, I want to conduct deep sequence analysis of people who have lived past the age of 100 to understand how these exceptionally long-lived individuals cope with this process. We are also conducting laboratory studies to identify more of the genes that drive the clonal hematopoiesis process and all of the diseases they may impact.

Q: WHY DID YOU CHOOSE UVA?

A: I came because of lots of like-minded individuals and great opportunities for collaboration with people like Drs. Brian Annex and Gary Owens, who are doing exciting work in peripheral artery disease and atherosclerosis. I also share the viewpoint of Dr. David Wilkes, UVA's medical school dean, who said to me, "I've read your work, and, if you are right, this changes everything."

WHAT ARE WE MISSING?

TRADITIONAL RISK FACTORS

HYPERTENSION

DIABETES

SMOKING

OBESITY

INHERITED RISK

ARE THERE OTHER FACTORS FOR CARDIOVASCULAR DISEASE?

AND COULD THEY BE ALTERED?

JMU students celebrate a milestone total. Below, miracle child Charlie joins in on the fun.

PHOTOGRAPHS © ANGEL CAVANAUGH

DANCE THE NIGHT AWAY

JMU, UVA Dance Marathons Inspire Philanthropy, Celebrate Families

A **LOT CAN BE DONE IN 12 HOURS**—including dancing non-stop to support patients and families at UVA Children's Hospital.

And that's just what students from James Madison University and the University of Virginia did. Earlier this year, JMU celebrated its 5th "Madithon," and UVA celebrated its 20th "HooThon." Collectively, the two dance marathons have raised almost $1.5 million for UVA Children's Hospital over the past 20 years.

Both events are part of the national Miracle Network Dance Marathon fundraising campaign to support Children's Miracle Network (CMN) Hospitals, which has raised more than $200 million for patients and families across North America. UVA Children's Hospital is the regional CMN hospital for both JMU and UVA, and the two universities have the largest collegiate dance marathons in Virginia.

JMU raised just over $115,000 at the 2018 Madithon, which is organized and hosted by the Gamma Theta Chapter of Phi Mu. Proceeds support various initiatives, including pediatric research and urgent patient and family needs. In 2017, Madithon broke a state record after it became the first dance marathon in Virginia to raise six figures.

"Phi Mu is excited and proud to support UVA Children's Hospital through Madithon," says Mel Smith George, JMU senior and 2018 Madithon chair. "It's a great event for our sorority, the Miracle families, and the entire JMU community. Getting to know the kids is by far the best part—they're the life of the party!"

Meanwhile, UVA has raised more than $1 million during the 20 years of its HooThon, most of which help fund pediatric cancer programs. Organized and run by UVA students every year, the 2018 HooThon was co-chaired by fourth-year students Sabin Jackson and Joy Hart.

"I was born with a very sick twin brother who didn't make it, so my parents brought me to the Dance Marathon every year and have always actively supported the Children's Hospital," says Jackson. "The cause has been near and dear to me my entire life. The event is the culmination of a year of hard work and a fun reminder of the difference we are making."

Families who have received care at UVA Children's Hospital attend both dance marathons to share their stories and thank students for their efforts.

"The biggest highlight for me every year is getting to know the kids and their families," notes Jackson.

"Children shouldn't have to worry about anything except being fun-loving, adventurous kids," says Hart. "I was, and still am, motivated by the ability to help make a difference through fundraising. When I was a second-year, the Marathon raised over $70,000, and I cried as soon as we revealed the total. It was my first year on exec and my first year really, deeply a part of something bigger than myself. To give all that money to the UVA Children's Hospital and know that it made a difference was uplifting and motivating." ●

THIS UVA PHYSICIAN IS FINDING NEW CURES FOR OLD DRUGS

IT HAS BEEN CALLED A SILENT EPIDEMIC. Age-related macular degeneration affects more than 10 million Americans and is one of the leading causes of blindness worldwide. As our population ages, the numbers will continue to climb at an alarming rate. The impact on public health could be devastating.

A UVA professor believes he can begin to turn this trend around.

"Drug approvals by the FDA—not just for macular degeneration, but for other illnesses as well—are dropping while more people are getting sick every year. It's a clarion call. We have to change how we search for new treatments and how quickly we can get these therapies to patients," says Jayakrishna Ambati, MD, the DuPont Gerry III Professor of Ophthalmology and director of the Center for Advanced Vision Science.

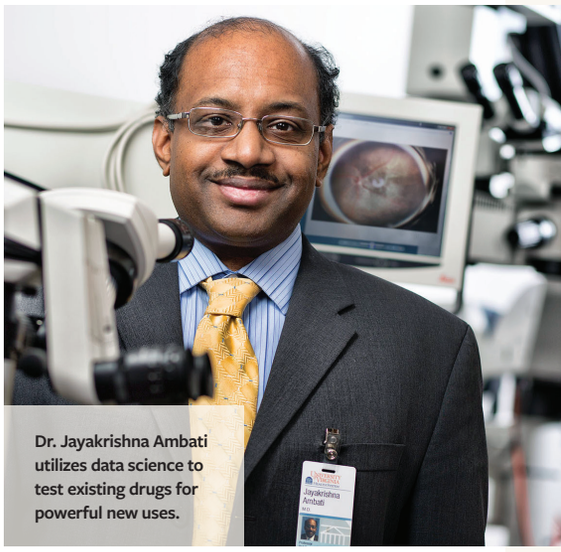
Ambati leads UVA's efforts to develop therapies that will stop the progression of macular degeneration and restore patients to a normal life. Recently, he and his team discovered a class of HIV-fighting drugs that have the potential to combat not only macular degeneration but also type 2 diabetes, rheumatoid arthritis, and atherosclerosis. A modified, less toxic version of this drug soon will be in clinical trials to test its effectiveness against macular degeneration.

"It was truly serendipitous that we found this compound," Ambati explains. "Sometimes drugs possess unknown and unexpected disease-preventing properties. These properties are just waiting to be discovered."

A "BOOM OR BUST" APPROACH

The cost to develop new drugs and acquire FDA approval is staggering. It takes, on average, 12 years for a new drug to reach the market at a cost of $2.6 billion. Over the past six years, just nine drugs achieved FDA approval for ophthalmic treatment and only five were new drugs. A new approach is desperately needed.

Ambati has assembled a team of clinicians, basic science researchers, statisticians, computer scientists, and data scientists from across Grounds to develop a systematic approach to identify all drugs that could be repurposed for other diseases. The team is collaborating with other groups across the country to create an algorithm that searches through multiple, independent medical databases. Results are studied over time across different locations and age groups. A new drug candidate must show evidence of its potential to prevent disease in every database before it is considered as a potential therapy for previously unimagined disorders.

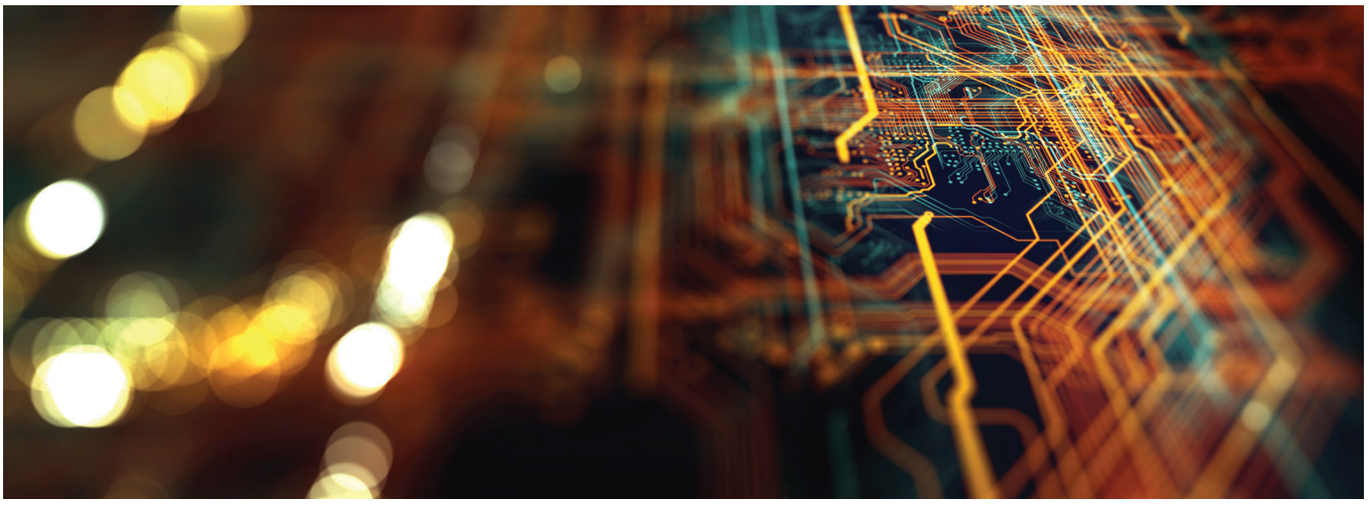


PHOTOGRAPH © JACKSON SMITH

Dr. Jayakrishna Ambati utilizes data science to test existing drugs for powerful new uses.

"Our work reveals these interactions hiding amongst large healthcare databases," he says. "It's Big Data archaeology." Repurposing existing drugs, and resurrecting those drugs that have been abandoned in the long approval process, allows researchers to "short circuit" the costly and time-consuming steps in the drug development process.

"What would it take to profoundly impact human vision?" Ambati asks. "Finding just one new drug of sufficient size, scope, and robustness could change how we care for blindness for years to come." ●



WANT TO EDUCATE THE BEST PHYSICIANS?

Start with Scholarships That Attract the Best Students

SMART. COMPASSIONATE. CREATIVE PROBLEM-SOLVER. These are skills that matter when looking to the future in healthcare. That makes them highly desirable traits in a medical student. Take, for example, first-year UVA medical student Slater Jameson. Jameson earned his undergraduate degree in biomedical engineering at Case Western Reserve University. First and foremost, he wants to be an excellent clinician. He's also interested in the intersection of medicine and technology and ways to make diagnosing and treating disease safer, more effective, and more comfortable for patients. When he applied to medical schools, Jameson had his pick. He chose UVA, in part, because of the scholarship support he receives.

Annual tuition and fees for an out-of-state student at UVA hover around $59,000; in-state costs fall about $10,000 lower. Eighty-four percent of the current class rely on loans and/or scholarships to complete their degrees. Even with this support, 73 percent will graduate with debt. While UVA's debt is lower than the national average, University medical students still graduate with a median education debt of $140,000.

For Slater Jameson, the support that he receives from a scholarship established by the School of Medicine Class of 1974 helps to make his education possible. Now, an alum who started with the class of 1974, but finished a year earlier, Allen Hogge, MD, along with his wife, Joan, is stepping forward to create another scholarship. They are taking action now to multiply the impact of their gift through the Bicentennial Matching Program. Through this special program, the University provides matching support equal to one-half of the Hogges' gift. A gift of $100,000 becomes a gift of $150,000 through the match.

"Joan and I are both from blue collar backgrounds," says Hogge. "We both had scholarship support, so this is our way of giving back. I also know from experience that good medical schools use scholarships to recruit the best students."

The Hogges are frequent visitors to Charlottesville, attending school-related functions and marveling at how much has changed since Joan used to catch a ride over the mountain from Madison College (now James Madison University) to attend UVA events with her husband-to-be. For Allen Hogge, UVA is in his blood: He earned his undergraduate degree and his medical degree at UVA, followed by a residency in obstetrics and gynecology. He also served on UVA's medical faculty.

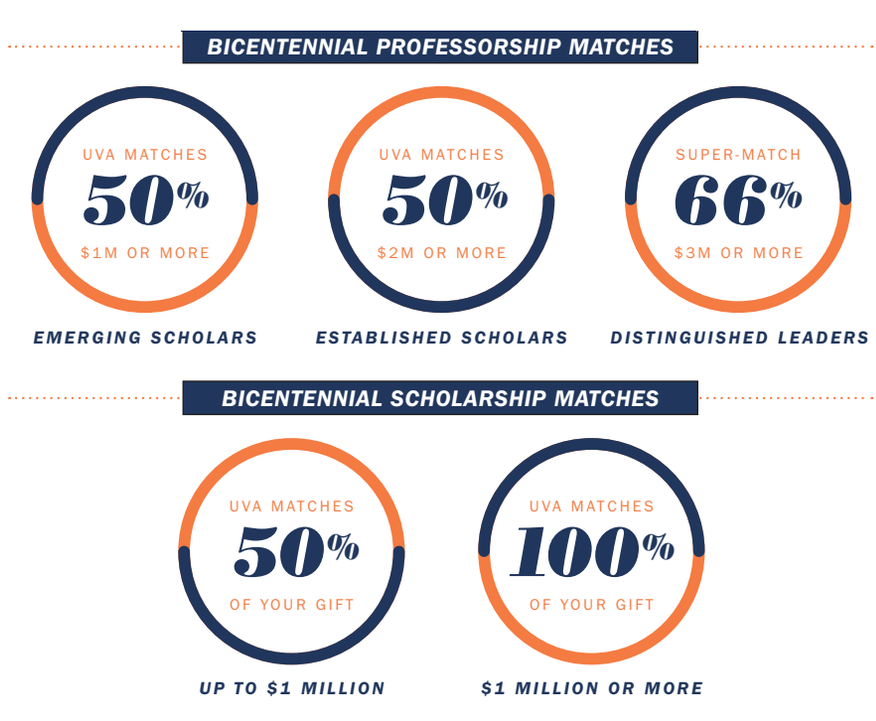
Allen and Joan Hogge's Bicentennial Scholarship will attract great medical students and help them succeed.

PHOTO © COE SWEET

"My license plate reads UVA 4X," Hogge confesses.

Hogge's career as an obstetrician/gynecologist took the couple to many places, eventually landing them at the University of Pittsburgh, where he chaired the Department of Obstetrics, Gynecology, and Reproductive Sciences from 2004 until 2014. Today, the Hogges have returned to Virginia, where he still practices several days a week in Richmond. This is the second scholarship that the couple has established in the UVA School of Medicine, aimed at attracting more students like Slater Jameson.

"Coming to UVA School of Medicine has been the greatest achievement of my life so far," says Jameson. "I feel humbled to be surrounded by such intelligent and talented classmates who care just as much for helping each other as they do their future patients." ●



Wendy Mbugua will work with the new concierge to make sure cancer patients feel comfortable and informed.

PHOTOGRAPH © JACKSON SMITH

> *Rallying around a common cause increases our sense of community and helps us accomplish big goals.* —Leslie Gilliam

SMOOTHING THE WAY FOR CANCER PATIENTS

A Family and a Community Step Up to Help

FOR PATIENTS AT UVA CANCER CENTER, things are about to get a little easier. As anyone who has battled cancer knows—or anyone who has helped a loved one on that journey—navigating the regimen of chemotherapy, radiation, and other treatments can be daunting. It's made even more complicated in a busy environment serving hundreds of other patients, all with specialized needs.

In UVA's Emily Couric Clinical Cancer Center, more than 200 cancer patients receive care every day. While there, patients have access to various resources, including computer tablets, art therapy sessions, financial counseling, and support groups. With that high volume of patients, it can be hard to ensure that patients know about all available resources.

That's about to change. Soon, cancer patients will have a navigator for these services—a full-time Care and Comfort Concierge. This individual will monitor patients' needs in clinic waiting rooms, answer questions, provide scheduling updates, offer healthy food and drinks, and generally see to each patient's wellbeing and comfort.

"The concierge will offer a welcoming presence, ensuring that our patients feel cared for the minute they come through the door," says Jody Reyes, MSBA, administrator, cancer services. "This position will also complement our new, real-time patient scheduling system. While the system helps us reduce wait times, the concierge will help patients feel comfortable and informed while they are here."

The concierge position is made possible thanks to the family and friends of Leslie Gilliam, a former UVA Cancer Center patient who was well known for her service to the local community. For Gilliam, philanthropy and community service were both essential to solving problems that exist in all communities.

"Rallying around a common cause increases our sense of community and helps us accomplish big goals," she once said. "That is where we get our heart and where we get to dream about what we can do together."

When Gilliam passed away from ovarian cancer in 2016, she left a big gap in the lives of her family and friends. Many of these individuals channeled their grief into honoring Gilliam's memory by contributing to a fund in her name. Gilliam's family was so touched by the outpouring of support that they matched those community gifts with their own. The combined funds will pilot the concierge program for two years and create a nourishment fund for cancer patients undergoing treatment at the Couric Center.

"Healthy eating and providing care and comfort for cancer patients were very important concerns for my mother," says Julia Gilliam, Leslie's daughter. "It's inspiring to see that, although she ultimately lost her battle with cancer, my mother's influence is still at work, improving the lives of hundreds of patients daily." ●

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PHILANTHROPY IN ACTION AT UNIVERSITY OF VIRGINIA HEALTH SYSTEM

UVA MEDICAL AND NURSING EDUCATION

THE NUMBERS ARE IN—and they look good. According to *U.S. News & World Report,* when it comes to preparing future physicians, nurses, and researchers, UVA is in the top of its class. That's great news for a healthcare system that will always need leading professionals. Here's how *U.S. News* breaks it down in its latest ranking of graduate programs:

UVA SCHOOL OF NURSING
#20 in the nation
#3 clinical nurse leader program
#11 psychiatric mental health nurse practitioner program
#16 doctorate of nursing practice program

UVA SCHOOL OF MEDICINE
#21 in primary care
previously #24
#26 in research
previously #27

Dorrie Fontaine, RN, PhD, dean of the School of Nursing, credits the school's success to its strong undergraduate programs, its exceptional faculty, and a growing body of scholarship. In the medical school, Dean David Wilkes, MD, attributes the rise in rankings to high-quality patient care, training the next generation of healthcare workers, and breakthrough research discoveries. ●

MORE MEASURES OF SUCCESS

UVA IS HOME TO 193 TOP DOCS. The "2017–2018 Best Doctors in America" list by Best Doctors Inc. honors 193 UVA Health System physicians among the best in their respective specialties. Only about four percent of U.S. physicians make this annual list.

UVA SPECIALTIES ARE HIGHLY RATED. National healthcare publication *Becker's Hospital Review* has recently honored UVA Medical Center on its list of 100 hospitals and health systems with:

- **great neurosurgery and spine programs**
- **great orthopedics programs, and**
- **great heart programs**

CEO PAMELA SUTTON-WALLACE LEADS in better, safer care. Sutton-Wallace was honored in *Modern Healthcare*'s "Top 25 Minority Executives in Healthcare." The publication highlighted UVA Health System's planning for last summer's white supremacist rallies in Charlottesville and caring for those injured that weekend. Sutton-Wallace was also noted for her leadership in improving quality and safety outcomes and helping to establish a statewide pediatric care network. ●

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