

Universities band together to develop S.C.-grown antibody test

BY LESLIE CANTU

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A statewide collaboration among South Carolina's research universities and largest health systems is setting the stage for widespread availability of coronavirus antibody testing, a key component of a strategy for safely reopening the state.

David Cole, M.D., FACS, MUSC president, has said there are five essential elements necessary to allow everyone to get to a "new normal": economic revitalization; diagnostic testing for COVID-19, the disease caused by this new coronavirus; antibody testing for SARS-CoV-2, the specific form of coronavirus that caused the pandemic; contact tracing; and protection of vulnerable populations.

MUSC has been working alongside Clemson University and the University of South Carolina, as well as Prisma Health, for the past month to develop reliable antibody tests. Antibody testing, along with diagnostic testing, would together provide policymakers with valuable information about the present state of infections once commerce recommences so they can determine what, if any, real-time measures might be necessary.

MUSC Health began offering antibody testing to its workforce on April 27, and the three universities hope to scale up testing quickly to be able to offer it to all health care workers in the state and, this summer, to the community at large.

As the pandemic took hold, MUSC decided on a dual approach to securing antibody tests. It would buy tests developed commercially, but it would also work on

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Photo Provided

Arthur, Russell and Theodore Livermore.

Boy triplets debut during pandemic. Their nurse has an unusual story, too

BY HELEN ADAMS

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Arthur, Russell and Theodore Livermore don't know it yet, but the triplets' tale is one that their parents – and a nurse with a pandemic plot twist of her own – will never forget.

To begin with, the triplets were a surprise for mom Miranda and dad Arthur Livermore of Mount Pleasant, South Carolina. The Livermores were already the parents of three girls, ages 5, 8 and 10. "We weren't planning to have any more kids," Miranda Livermore said.

But they quickly adjusted and were thrilled with the news. Then came the coronavirus pandemic.

"It was pretty stressful," Miranda Livermore said. "There were policies – like no visitors at our doctor

visits. So I was going to ultrasounds by myself, and I had to end working a little bit earlier."

But her husband was able to support her at home. "I was able to work virtually," he said of his job with an aircraft manufacturer.

They were worried that COVID-19 precautions might prevent him from being allowed to be present at the boys' birth. "That was a fear, especially when they were expecting the virus to peak right around the time we were planning to have them," Arthur Livermore said.

"We didn't know what the policy would be. But MUSC let us know that they were advocating to try to make sure she had at least one support person. We got a call from the nurse on Monday letting us know I'd be able to support her, and we had somebody to watch our children, so we were able to make those arrangements."

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The news came just in time. Miranda Livermore's water broke at about 1 a.m. on April 22, about a month and a half before her due date. She and her husband headed to the MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion, which had opened just two months earlier.

The experience was unusual from the start. "From the moment we came into triage, every nurse was masked in the triage center until they knew we were negative," Miranda Livermore said. "We were asked to wash our hands and be prepared to go in for a COVID test."

Within an hour, she learned that neither she nor her husband had the illness caused by the new coronavirus. "It was such a relief," she said.

Arthur, Russell and Theodore — whose initials are the same as their dad's nickname, Art — arrived at about 5:30 that morning. They became the first triplets born in the new hospital.

Because they were premature, not unusual for triplets, they're being cared for in the neonatal intensive care unit. The Livermores were happy to note that the NICU has a lot more space and amenities for families than the old children's hospital.

"There's a lot of interesting technology," Miranda Livermore said. "And they have the iPads at the bedside that you can use to FaceTime with your family. Just a beautiful environment. We feel really blessed to be in the new hospital."

Then, they found something — or someone — else in the NICU, who shared the distinction of having a major



Photo Provided

Arthur and Miranda Livermore with their daughters Claire, Victoria and Amelia on Easter.



Nurse Kara Ellison Newton and her husband, Brandon Newton, share their wedding with guests via Zoom.

Photo Provided

life event occur during the coronavirus pandemic. Nurse Kara Ellison Newton, who took care of the family after the babies' birth, told the Livermores that

she just gotten married the previous weekend. Not in the upstate of South Carolina, as planned, but in her backyard.

"Due to the pandemic that happened, and the rules and regulations, we decided to have a virtual wedding in our backyard," Newton told them. "So it was special. Something we'll always remember and can tell our kids and future grandkids about down the road. We had around 200 people watch it using Zoom. It was really cool and special."

Miranda Livermore said she and her husband loved hearing Newton's story. "Just how grateful she is and just focusing on the positive. I think all of us, at this time, just have to focus on gratitude to get us through it all. That's what we're both doing."

The triplets may need to stay in the hospital until their planned birth date in early June to allow them time to develop enough to be able to go home. Their mom and dad can't wait, despite the fact that their babies will get there during a pandemic.

"We've been stocking up on diapers, and as we need, formula, things of that nature," Arthur Livermore said. "We're ordering everything online and having it shipped. We're quarantining it in the garage for a couple of days then bringing it into the house. Trying the best we can to get everything they need."

The pandemic will also mean the traditional visitors who greet babies, family and friends, will for the most part have to keep their distance for a while. But Miranda Livermore said their daughters said they want to pitch in. Children will help children at a time when many adults are thrown off by the coronavirus pandemic. "We're just going to have to power through and use those three girls to help us through."

MUSC CATALYST news

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Suspension of print version of The MUSC Catalyst News during COVID-19 pandemic

The MUSC Office of Public Affairs and Media Relations has temporarily suspended the printing, delivery and distribution of its bimonthly publication, The MUSC Catalyst News, during the COVID-19 pandemic. Your safety and that of our MUSC employees, students and delivery carriers is critically important. We are

committed to keeping our readers informed about the latest novel coronavirus news and other important information that affects the MUSC community. We will continue to rely solely on the online version of our publication. Visit "MUSC Catalyst News in Print" at <https://web.musc.edu/about/news-center>.

Sodexo launches Groceries 2 Go, on-campus grocery shopping

Fresh, convenient, affordable, customizable on-campus grocery shopping for MUSC employees

The COVID-19 pandemic is a tremendous stressor for MUSC care team members and their families, particularly for health care workers who are on the frontline of the pandemic response.

Similar to most Americans amid the pandemic, many of our care team members and their families are at risk for experiencing financial challenges, food insecurity and increased barriers to obtaining adequate nutritious food. This includes a decrease in household incomes, lack of time to grocery shop due to shift or schedule changes, lack of child care, among other issues, all as result of the pandemic.

Throughout the pandemic, the MUSC Office of Health Promotion has collaborated with Sodexo to expand services and launch new programs, including Groceries 2 Go, in order to serve our MUSC care team members and their families, enterprisewide, particularly as it relates to food security, throughout the pandemic response.

As a result, the Groceries 2 Go program was launched to meet the need for affordable, convenient

and low- or no-contact grocery shopping for all MUSC care team members and their families.

❑ What is Groceries 2 Go?

Groceries 2 Go is a collaborative program created by the MUSC Office of Health Promotion and Sodexo to ease the burden of MUSC employees getting groceries by offering to supply groceries at a reduced price to them at PJ's Coffee on MUSC's main campus.

The Groceries 2 Go program prioritizes affordability by offering deeply discounted prices on fresh produce, kitchen essentials and shelf-stable goods for the preselected grab-and-go options as well as preordered U-Pick customized orders.

Additionally, the Groceries 2 Go platform is supportive of local small businesses in the community by sourcing from local farms and businesses whenever possible.

❑ Who is eligible for Groceries 2 Go?

Groceries 2 Go is available to all MUSC care team members (anyone who has an MUSC badge, including care team members affected by the temporary workforce adjustments.) Whether your most limited resource is

MUSC Health & Well-Being

By Susan L. Johnson, Ph.D.,
MUSC Office of Health
Promotion



time, money, transportation or mental bandwidth, Groceries 2 Go is here to help.

❑ When and where do I pick up Groceries 2 Go?

- No preorder is required: Come to PJ's Coffee in the Colbert Library on Tuesdays between 4 and 8 p.m. to purchase a grab-and-go bundle of preselected groceries.

- Customized U-pick orders: Place a customized order by 12 p.m. on Tuesdays, and it will be available for pickup on Tuesdays, between 4 and 8 p.m., from PJ's Coffee in the Colbert Library. Please note that there is a \$15 minimum for U-pick orders.

For more information or to place a custom order, visit is.gd/Groceries2Go

Coronavirus serves as spotlight on nationwide health care disparities

BY BRYCE DONOVAN

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At first it looked like an anomaly. COVID-19 was disproportionately killing more African Americans than any other race in this country. But then an all too familiar pattern began to emerge, and it wasn't pretty. Health disparities exist in this country, not just with coronavirus, but nearly all illnesses. And, regrettably, this has been the case for a very long time.

"Sadly, this is nothing new; it's just now in our face," said Virginia Fonner, Ph.D., professor in MUSC's Department of Psychiatry and Behavioral Sciences.

According to the Department of Health and Environmental Control, among the more than 4,000 South Carolinians diagnosed with COVID-19, 54% are white and 41% are black – even though African Americans make up only 27% of the state's population.

"Those numbers should get your

attention," said Chanita Hughes-Halbert, Ph.D., psychologist and associate dean for Assessment and Evaluation in MUSC's College of Medicine. "I think certainly there's an ongoing history of racial disparities in health care. I think this is just really shining a light on it and that they've been pervasive in our society for decades."

According to Hughes-Halbert, who has studied health disparities for the better part of her career, there are many different reasons why these gaps in treatment exist. Some are purely physical, meaning that some people have different immunities and just handle infection and sickness differently. At the same time, she said, there are other factors – such as social conditions, behavior, geography and culture – that influence risk factors not only for health but also a person's or community's well-being. More specifically, things like access to good education, affordable housing,



Photo by Sarah Pack

Chanita Hughes-Halbert feels there is an opportunity for us as a nation to learn from COVID-19.

jobs with health care coverage; living in a neighborhood where it's safe to walk; having access to high-quality food and a support structure – all of these "social determinants of health" affect a person's physical, mental and emotional condition.

Take this real-life example of how disparities might inform a doctor's visit. A patient has high blood pressure. His doctor prescribes him an ACE inhibitor to lower it. Problem solved? Not if the patient doesn't share with his doctor that

See DISPARITIES on page 10

Hydroxychloroquine trial set to launch at MUSC

By HELEN ADAMS

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MUSC Health is the only health care system in South Carolina to participate in a carefully structured national clinical trial testing the effectiveness of hydroxychloroquine in patients with COVID-19.

Andrew Goodwin, M.D., a specialist in treating acute respiratory distress syndrome and an associate professor in the College of Medicine, is leading MUSC Health's part of the trial.



Goodwin

"I think this is tremendously important for a number of reasons. First, we really don't have any proven therapies for COVID-19. And so I think from a public health perspective, identifying therapies

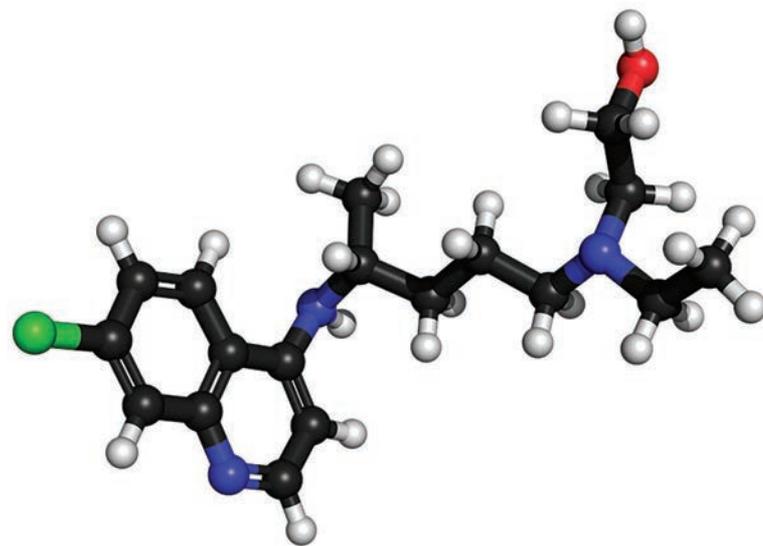
that actually improve outcomes is hugely important," Goodwin said.

"There's so much uncertainty in the public as to whether hydroxychloroquine helps or harms. There have been a lot of people in the media, as well as the government, who have been strongly supportive of this medication, really without sufficient data to prove that it actually helps."

The trial, called "Outcomes Related to COVID-19 Treated with Hydroxychloroquine Among In-Patients With Symptomatic Disease," is more simply known as ORCHID. It's funded by the National Heart, Lung and Blood Institute, which is part of the National Institutes of Health.

The goal is to enroll 550 patients across the country. Goodwin said there's no limit on the number of patients who could be involved at MUSC Health.

"We will be looking for patients who are admitted to our specialized units reserved for COVID positive patients and match the patients' characteristics with the inclusion/exclusion criteria of the study,"



A simple ball and stick representation of an uncharged molecule of hydroxychloroquine. Illustration by Jovan Gec, licensed under the Creative Commons Attribution-Share Alike 4.0 International license.

Goodwin said. "Specifically, we will be looking for patients who have confirmed infection who have had symptoms for 10 days or less and who haven't been taking hydroxychloroquine already."

Patients who choose to take part in the trial will either get hydroxychloroquine or a placebo. Neither they nor the doctors will know which one they're getting until after the results from the trial are announced. It's a way to keep bias from affecting the data.

Goodwin said there are two possible ways that hydroxychloroquine might help patients fight COVID-19. "The first is, hydroxychloroquine's primary use is as an immunomodulator. It's used widely for autoimmune diseases for this purpose. And, as one of the facets of COVID-19 is that patients seem to have an aggressive immune response to the virus, perhaps dampening some of that down with this immune modulating effect may be beneficial.

"The second potential way that the hydroxychloroquine may help with COVID-19 infection is there have been largely in vitro cell culture studies that have suggested the drug has direct antiviral properties, specifically that it can alter the receptor by which COVID binds to cells and potentially make it less likely that COVID can enter cells. It directly affects the way the virus can fuse with a cell as well. So the hypothesis is that the

drug may limit the ability of the virus to attack the body by those mechanisms."

Hydroxychloroquine does carry some risks, Goodwin said. "The most common side effects are gastrointestinal symptom-related, such as diarrhea and nausea."

But those aren't the most worrying possible risks. Goodwin said hydroxychloroquine can also affect the electrical activity of the heart.

"If this electrical activity system is altered too much, it can predispose people to having cardiac arrhythmias. So one of the important safety features of this trial is, in order to participate, you have to have a screening EKG to measure your QT interval," he said, referring to a measurement of the heart's electrical activity.

"It will be monitored during the study as well. So with the safety monitoring we have built into this study, I feel comfortable that patients are not assuming unnecessary risk."

Sandoz, a division of Novartis Pharmaceuticals, is supplying the medications for the trial.

Goodwin said MUSC Health's participation shows that it values being on the cutting edge of science. "Here we have a brand-new global pandemic and MUSC is one of only 60 centers in the country that is going to be able to answer a key question about how we treat this."

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MEET TALESHA



Talesha Fisher

Department; How long at MUSC
 MUSC Health East Cooper Women's
 Ambulatory; 12 years

**How do you feel you're making a
 difference during this time of COVID**
*By being available to support the needs
 and care of OB-GYN and Urology-GYN
 patients during the coronavirus pandemic*

Family
Children, Reginald, Raegen and Renazia

Favorite springtime memory
*Enjoying the presence of lots of family
 during our family reunion*

Favorite food:
Steamed blue crabs

**First thing you'll do once the
 Lowcountry COVID-19 restrictions are
 lifted**
Celebrate my 50th-something birthday

**Who inspired you to work in health
 care**
*All the doctors at East Cooper Women's
 Health because they are so dedicated to their
 patients all the time*

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MUSC's digital employee well-being program, Imagine U, features over 100 challenges organized within four main categories of well-being:

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 Preventative Care
 Psychosocial Health

The catalog of well-being challenges can be accessed by any MUSC employee 24/7 on any desktop computer, tablet or smartphone device. Furthermore, the majority of the Imagine U challenges can be completed remotely and will provide MUSC employees and their families with valuable health and wellness resources and tools that they can utilize to promote physical and mental well-being as we adapt to the challenges of the COVID-19 outbreak in the weeks ahead.

Visit www.musc.edu/iu to start today!

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SGA redirects activity funds to emergency response

By LESLIE CANTU

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When the Student Government Association at MUSC had to cancel all its spring activities, including the 70th anniversary of Alhambra, a much-anticipated end-of-the-year beach party, there were any number of things the students could have done with the money budgeted to pay for those events.

SGA members could have decided to give every graduating senior a Target gift card to decorate their new homes. They could have banked the money to throw an even bigger party next year.

Instead, the SGA voted to help members of the MUSC family who are struggling. The group decided to donate to the student emergency fund overseen by the Office of Student Programs and Student Diversity and to the MUSC COVID-19 Emergency Response Fund to assist employees.

“I was blown away,” said Austyn Posey, president of the SGA and a graduating member of the College of Pharmacy class of 2020. She had expected that the

group might decide to give \$5,000 or so to beef up the student emergency fund, which is replenished at the beginning of each school year with \$20,000 from the SGA. Instead, the group matched its annual donation – a full \$20,000.

Posey said she and other SGA members have heard stories of how fellow students have struggled during this pandemic, which has forced widespread shutdowns of schools, businesses and public amenities. Some have been unable to work at their part-time jobs, and others have spouses who have been laid off. Posey said the emergency fund is open to students on a first-come, first-served basis and will remain in effect until the money runs out.

The group also directed \$3,500 to the MUSC emergency fund and \$3,500 toward purchasing food for MUSC staff.

“This is something I was even more surprised about, because these are student fees that we got. I expected them to want to try to do some kind of virtual event for our students, but the overwhelming majority feeling from the meeting was that we are in the health



Photo by Anne Thompson

SGA executive officers during a dinner last fall. Back row from left: Terrance Jackson (CDM), Aubree Houston (COP), Bryce Robbins (COM). Front row from left: Alex Rice (COM), Austyn Posey (COP), Hope Beebe (CON).



The Student Government Association, along with deans of the colleges, MUSC President Dr. David Cole and provost Dr. Lisa Saladin, at a dinner hosted by Dr. Cole every fall.

“...the overwhelming majority feeling from the meeting was that we are in the health care field, and we need to support the community we’re joining.”

Austyn Posey

care field, and we need to support the community that we’re joining,” Posey said.

The MUSC COVID-19 fund includes support for the institution to step up during this crisis as well as direct support to care team members facing financial

challenges because of reduced pay or hours. The SGA will be partnering with local restaurants – another way to support community – to provide meals to units nominated for assistance.

Posey, who is headed to Asheville, North Carolina, for a residency, said that after representing her college for three years and then leading the SGA, it was bittersweet to close out the year with a virtual SGA meeting instead of the real thing. But she’s happy that the group was able to do some good with its last act of the year, and she’s eager to see what the group does next year under the leadership of incoming president Joy Kirkpatrick, of the College of Dental Medicine.

“We’re excited to see where she can take this group,” she said.

MUSC Health care teams celebrated in solidarity by Lowcountry first responders

BY CINDY ABOLE

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In an act of solidarity and gratitude, first responders from throughout the Lowcountry, police, EMT and fire department teams, offered heartfelt applause, homemade signs, flashing lights and inspirational music on Tuesday nights in April as their special way to thank health care workers for their service and commitment during the coronavirus pandemic.

All around the country, first responders have celebrated nurses, physicians, frontline hospital health care workers and support staff throughout this pandemic with rooftop applause, community parades, vehicle processions at hospitals and medical facilities and military jet flybys.

This is what inspired Sgt. Sean Engles, community outreach officer for the City of Charleston Police Department (CCPD), to initiate something in the Charleston community for MUSC and other Lowcountry hospitals. Engles saw how one community in Ohio appreciated hospital health care workers

and wanted to do the same in the Holy City. He reached out to colleagues like Kevin Boyd, MUSC Health chief security officer and a former captain with CCPD, and others to see who would like to be involved.

“Everyone willingly jumped in,” said Engles. “Fighting the COVID-19 fight is not a race but definitely a marathon. All of us want to continue supporting our city’s health care workers because they’re all doing amazing work inside their hospitals.”

Maj. Dorothy Simmons, MUSC Department of Public Safety, was out with her teams showing support at the corner of President and Doughty streets on the evenings of April 21 and April 27.

“I have them in my heart,” said Simmons. “I feel compassion for each of them and know these health care workers are inside the hospital working in the hot zone of this pandemic and doing their jobs to help people in the community. Nurses and staff see us cheering and supporting them on the streets – it really hits home. And little things like being out here and showing our appreciation toward them helps all of us feel great in

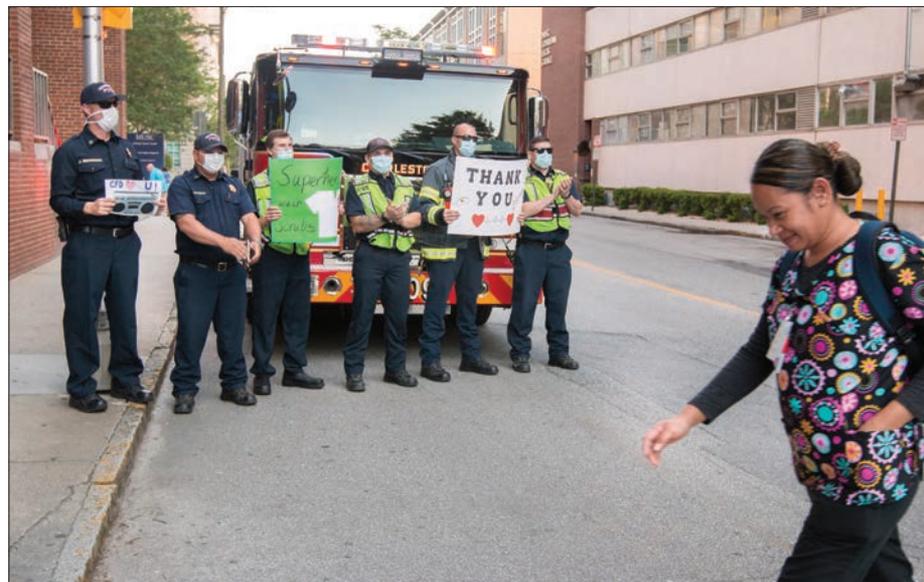


Photo by Sarah Pack

City of Charleston Fire Department first responders wave signs, turn on engine sirens and applaud MUSC Health employees coming to and from work during the April 21 celebration on Jonathan Lucas Street.



Nursing student Jonah Burrell shows support to nurses and MUSC employees on April 27.

return.”

Nursing student Jonah Burrell may just be completing his first year at MUSC, but he’s chosen to celebrate the end of the semester by biking down to University Medical Center to show appreciation to the dozens of MUSC workers leaving their shifts the evening of April 28.

“I’m out here tonight to show my support to frontline health care workers and heroes, especially nurses,” said Burrell, holding a homemade support

sign. “As part of a core of future nurses, we’re looking to you with so much love and appreciation – so keep it going.”

The sound of gratitude also came in the form of a thunderous roar zipping across the azure noon sky as a pair of F-16 fighter jets from the S.C. Air National Guard flew over the MUSC campus, Monday, April 27, in tribute to health care workers fighting on the front lines to care for patients in the battle against the COVID-19 virus.

The Air National Guard’s “Swamp Fox” flyover was part of the statewide mission, Operation American Resolve, which was created to champion statewide and national unity during the coronavirus pandemic.

Stacey Kneeshaw, a research specialist in the Department of Biochemistry and Molecular Biology, joined a cluster of MUSC employees who were scattered outside the Horseshoe glued to the skies.

“I think it’s really awesome that the South Carolina National Guard and others are showing their support and recognizing everything that everyone in the hospital and on campus are doing day in and day out,” said Kneeshaw, who was able to capture the flyby on her cellphone.

Lisa Goodlett, MUSC Health chief financial officer, was also among the midday crowd who witnessed the event.

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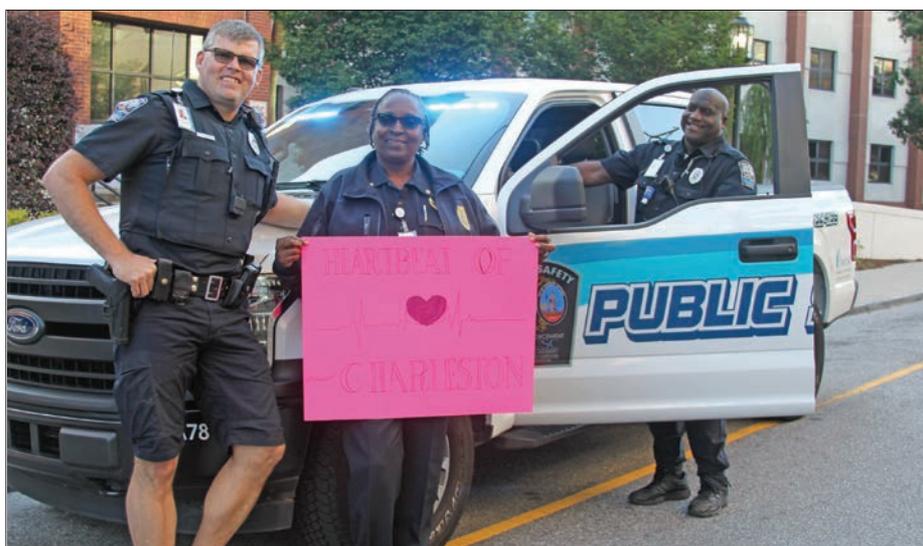


Photo by Cindy Abole

MUSC Public Safety’s Maj. Dorothy Simmons, center, and her team show their support at the corner of President and Doughty streets.

How to talk to kids about their burning coronavirus questions

BY BRYCE DONOVAN

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Editor's Note: This is part of a series of light-hearted columns dealing with life in the midst of newly difficult times.

Kids love asking questions. Which is great. We love their sense of wonder and desire to learn everything about the mysterious world they live in. The only problem is adults, sometimes, don't have all the answers. That's why, when moments like that arise, it's important for us as parents to take a deep breath and – drawing upon our many years of schooling and the rich tapestry of life experience – be as direct and honest with them as possible. By which I mean wait until they aren't paying attention and look the answer up on our phones.

Take this new coronavirus, for example. Every day, there's new information out there that is sometimes helpful and sometimes confusing. So, when my kids recently started asking

questions about it, I was at a bit of a loss. Not because I don't know how to talk to kids. Oh no. In fact, you could easily argue that I don't remember how to speak to adults anymore since most of my daily conversations revolve around Legos and imaginary friends. But I realized that other kids are probably asking their parents the same questions. So I called up MUSC pediatrician Luke Emmanuel Edmondson, M.D., for a little help.

The first thing he did was to give me three tips for speaking to kids about tough subjects. They are:

❑ Keep it light.

“For younger kids especially, you want to avoid talking about anything too scary and that includes stuff they might be seeing on TV or the news,” he said. To which he didn't add but probably meant to: “This obviously includes ‘Keeping up with the Kardashians.’”

❑ Be calm.

Striking the right tone is key. “You don't want to put too much on a



Photo by Caleb Woods on Upsplash

kid,” he said. “Use your parent voice so everyone knows you're taking it seriously. But smile and be reassuring.”

❑ Have a plan.

This one might make most people

panic since, let's be honest, many of us are just winging this whole parenting thing anyway. But Edmondson said it's important to “know what you want to

See KIDS on page 9

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KIDS *Continued from Page Eight*

talk about before you do it.”

CORRECT: “Let’s talk about why you’re scared and ways to help you calm down.”

INCORRECT: “You being scared reminds me of that time on ‘Dukes of Hazzard’ when Bo and Luke saw this guy rob a bank, so they hopped in the General Lee — they were so cool, they used to always jump in through the windows, though I’m not really sure why they did that ... kind of seems like just using the handle and opening the door would be faster ...”

Armed with this information, I went back to my kids and had them ask me anything they wanted to know about the coronavirus. I took a stab at answering their questions before letting the adults in the room — the Centers for Disease Control and Prevention and Dr. Edmondson — have the last word. Most of the time.

So on to my kids’ questions.

• **Q. Dad, what is the coronavirus?**

Me: Wow. OK. Tough one right out of the gate. The coronavirus — or “novel coronavirus” as we grown-ups like to call it, because it is a fictitious prose narrative of book length — is an infection that can make you really sick and, in some instances, die. If I’m not mistaken, scientists believe it originated from bats. So, obviously baseball players would be at the highest risk of contracting it. You should be fine.

CDC: It is a virus which can cause a respiratory illness, known as COVID-19, and can easily be spread from person to person. Some people who contract it have pneumonia in both lungs, multi-organ failure and, in some cases, die. It was first identified during an investigation into an outbreak in Wuhan, China.

Me: Nailed it.

• **Q. Why can’t I play with my friends?**

Me: Because all of your friends are annoying.

Edmondson: That’s tough. Of course, you want to play with your friends. But these viruses spread from one person to another through the air and on surfaces. So, in order to keep as many people from getting sick as possible, we need to keep everybody separated.

Me: That too.

• **Q. Why do we have to be so far apart?**

Why can’t we just not touch each other?

• **Me:** It’s just good practice for when you become teenagers.

• **Edmondson:** These viruses are tiny, and they usually spread in respiratory droplets. You can’t always see them. Every time somebody coughs or sneezes, we spread it, whether you see it or not. If you breathe it in, or then touch something they touched, you can get it. The further apart you are, the less likely those droplets will reach you.

• **Q. I’m scared me or one of my friends is going to get it and die.**

Me: Relax. Kids aren’t as likely to get very sick with this thing. Scientists don’t fully understand why, but you guys seem to be less affected by it. Sort of like how you and your sister can watch the same episode of “Paw Patrol” over and over without getting brain damage.

CDC: The people most affected by the coronavirus are older adults and people (of any age) who have serious underlying medical conditions, such as heart disease, diabetes or lung disease.

• **Q. I don’t mind being out of school, but you and mom don’t really teach us much. Not to be rude, but you kind of just look at the textbook, get frustrated and then start yelling, “Who does multiplication like that?!” and then storm out of the room.**

Me: I’m sorry — was there a question?

• **Q. What do you do if you get the coronavirus?**

Me: I’ll tell you what you do. Actually, I have no idea what you do. But anytime I’m lost or scared I just eat a bunch of chocolate chip cookies and Doritos. So try that.

Edmondson: The first thing is don’t panic. You’re probably going to be OK. Stay away from everybody else. For kids over the age of 2, they can do MUSC’s virtual care visit. For most people, it will just be a mild illness. Self-quarantine, take Tylenol and rest. We want you to call your doctor if you’re breathing fast or having a hard time breathing. Then, if your doctor is worried about your condition, he or she might send you to the hospital.

• **Q. Can you get your pets sick?**

Me: Look, how many times have I told you Sky Zone is closed?! Sorry. Reflex

action. I think the pets are safe. Speaking of which, has anybody fed the bat today?

Edmondson: Some have gotten sick, but it doesn’t seem to be a big issue. Cats and dogs rarely get the same viruses we do, so your pets are most likely fine. Assuming you don’t have a pet bat.

Me: (*Awkward laugh*) Ha! What? Of course not.

• **Q. What should I do if I recently did some business travel in an area with ongoing spread of COVID-19?**

Me: Wait. What?

• **Q. Is there a vaccine?**

Me: I’m not a scientist, but if I’ve learned anything from Hollywood, it’s that right now, scientists all over the globe are wearing lab coats and using dry-erase markers to write complex formulas on a huge pane of glass while their colleagues look on, hands pensively on their chins, nodding occasionally.

Edmondson: Not right now, but we are working really hard on finding one.

Me: Or that.

• **Q. When can I hug my nana again?**

Me: That’s really sweet. But not until she apologizes for making fun of my haircut.

Edmondson: We just have to be patient with this and keep the ones we love at a distance. It’s for their own safety. And it won’t be forever. So we need to be smart and wait until the doctors say it’s safe to be around them again.

• **Q. Will you be picking your nose less now?**

Me: (Stunned silence.)

• **Q. Dad?**

Me: No.

So there you have it. The right way to talk to your kids as well as answers to their most common coronavirus questions. Now if you’ll excuse me, I have to get back to an important meeting with my daughter, the Easter Bunny and Elsa from “Frozen.”



MUSC Health
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Changing What's Possible

YEAR OF THE NURSE 2020
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Nurses Week 2020 Activities Calendar
Charleston Division

Wednesday, May 6

Hawaiian Shirt Day

Leadership Rounding 7a-11a, 7p-11p

Thursday, May 7

Crazy Sock Day

Friday, May 8

Mask Decorating Day

Saturday & Sunday, May 9-10

Fun Scrubs Day

Monday, May 11

Favorite Nationality Day

Tuesday, May 12

Celebrate Florence Nightingale's Birthday

Perks & Discounts

 **Dunkin' Donuts** – Free med. coffee & donut on May 6 ([View flyer](#))





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DISPARITIES *Continued from Page Three*

he can't afford to buy it. So, he doesn't get the medicine, problems continue — or possibly get worse — and a year later, he goes back to the doctor for the same issue. It's back to square one.

"That's a missed opportunity. Critical time lost," Hughes-Halbert said. "It's a vicious cycle that we can find ourselves in." Plus, she explained, it's people with chronic conditions, like high blood pressure and diabetes, who often face the most increased risks for severe complications if they get the virus.

Marvella Ford, Ph.D., associate director of cancer disparities at MUSC's Hollings Cancer Center, agrees. She explained that when you have a virus like this, it's going to go to the most vulnerable groups, where it can take hold.

"People with service jobs. Delivery drivers, kitchen workers, essential workers with low-pay and high-risk jobs that put them in positions where they're more likely to contract the virus and then don't have the financial resources

to combat it."

Ford would know a thing or two about health disparities. She got into this line of work because of how directly they affected her own life — she never got to meet any of her grandparents, and both of her parents died before she turned 41.

Still, these personal hardships served to spark a passion in her life and career. "It's exciting to talk about something that's been such a major part of my life, and now that it's at the forefront of people's minds on a national and international level, I really believe these things are solvable."

But it starts at the top, Ford said, adding that groups of people can't simply separate themselves from others — especially during times like this.

"What happens to one group affects all of us," she said. "This is an opportune moment to come up with solutions to keep our entire population healthy. That's the key with successful interventions. It's not enough to tell people not to do things; we need to give them the tools. That's where we don't want to fall short."

ANTIBODY *Continued from Page One*

creating its own so it could be self-reliant.

"Early on in this coronavirus pandemic, we realized in all kinds of ways our supply chains were being interrupted. Most of the supply chain interruptions were either from consumption — other places trying to do the same thing we're trying to do — or from true disruption in the supply chain," said Danielle Bowen Scheurer, M.D., chief quality officer for the MUSC Health system. "For example, many of our medical supplies come from China, Singapore and places that were hard hit to begin with, so production went down, and consumption went up.

"We've learned the hard way that any one product line can literally be shut off in a matter of hours," she said.

The hospital system was able to buy antibody tests from Abbott Laboratories. The Department of Pathology and Laboratory Medicine validated them, and these tests are now ready to roll out.

At the same time, scientists at each of the three universities have been racing to build a test. Each university has its own core competency, and the three have been able to complement each other, Scheurer said.

Labs at the three universities started off by working with plasmid, or DNA molecules, that expressed SARS-CoV-2 proteins. The plasmid was obtained by Clemson

University from Mount Sinai Laboratory, which on April 15 announced it had received emergency-use authorization for an antibody test it developed. As each university works on developing a test and growing its own proteins, they're cross-checking each other's work and using patient samples from MUSC Health and Prisma Health to validate their results.

At MUSC, Satish Nadig, M.D., D.Phil., medical director of the Center for Cellular Therapy, got a call from Cole a few weeks ago asking him to get a group together to start working on an in-house antibody test.

The first person he called was Shikhar Mehrotra, Ph.D., associate scientific director of the MUSC Center for Cellular Therapy. Then they brought in MUSC colleagues Stephen Tomlinson, Ph.D., interim chairman of the Department of Microbiology and Immunology, and Philip Howe, Ph.D., chairman of the Department of Biochemistry, forming a truly interdisciplinary group.

"The word interdisciplinary is often a buzzword that is in vogue, but this group showed what it looked like in action," Nadig said.

The group took a two-pronged approach. Howe and Tomlinson would work on growing proteins, using the Mount Sinai plasmids, while Carsten Krieg, Ph.D., an assistant professor in the Department of Microbiology and Immunology, would purchase proteins that recently had become commercially available. The team, with the Center for Cellular Therapy leading, would then

Hughes-Halbert agreed, explaining that MUSC recognized this issue years ago and her precision medicine center is responding by developing continuing education courses to help providers better understand these types of social determinants. And over the past 15 years, both Hughes-Halbert and Ford have worked tirelessly, with complete buy-in from leadership, not only to gain a better understanding of patients who have these types of hardships but also to give providers better tools to mitigate them.

Ford and Hughes-Halbert have led studies funded by the National Institute of Minority Health and Health Disparities as well as the National Cancer Center. Hughes-Halbert has not only evaluated how providers deal with their patients but has also developed tools to track, measure and improve those interactions more effectively. Currently, she is working with MUSC endocrinologist Anita Ramsetty, M.D., to gain a better understanding of how food and security are discussed in clinical visits. Meanwhile, Ford has

spent the majority of her professional life identifying and addressing the disparities in cancer outcomes due to race, geography and other socioeconomic factors. She is currently focused on providing lesser-served communities with improved access to mobile health care, including telehealth services. She also leads the National Cancer Institute-funded South Carolina Cancer Disparities Research Center, along with Judith Salley-Guydon, Ph.D., of South Carolina State.

Though potentially uncomfortable at times, these types of frank but delicate discussions are critical, said both Hughes-Halbert and Ford. This type of paradigm shift requires a strong commitment at both the institutional as well as patient level.

As for this coronavirus outbreak, MUSC President David Cole, M.D., FACS, said the university is actively planning next steps for how it can implement better and more effective screening for COVID-19 with testing and follow-up in rural and African

See DISPARITIES on page 11

develop and validate tests with each, first using control antibodies, then using patient samples available through the convalescent plasma program led by John Wrangle, M.D., and a biorepository overseen by Patrick Flume, M.D.

"This highlights the importance of research in a medical institute. Having both the basic science component and the clinical component together in an institute like MUSC is an advantage to us," Mehrotra said.

Many of the scientists pivoted from their regular research to concentrate on the antibody project, putting in nights and weekends as they compared notes across the state. Phil Buckhaults, Ph.D., an associate professor in the College of Pharmacy at the University of South Carolina, typically focuses on cancer genomics — figuring out cancer mutations and how to kill cancer cells. He doesn't have a background in epidemiology or infectious diseases, he said, but he has skills that are useful — namely, his lab is skilled in high-throughput sequencing, which should enable them to eventually run tests for 20,000 people a day.

The three universities have ongoing partnerships in a variety of areas, but this effort feels different to all involved. Buckhaults points to how scientists from the three institutions are sharing their problems and solutions with each other in regular video calls and emails in a refreshing break from typical academic

See ANTIBODY on page 11

ANTIBODY *Continued from Page Ten*

competition. It feels like he's been dropped in the middle of a forest fire and, though everyone is wearing different uniforms, they're all passing buckets of water and chopping down trees together as fast as they can, he said.

"It took something like this to scare the bejesus out of everybody," he said.

And he thinks it's smart for the universities to work together to ensure that the people of South Carolina have access to these tests.

"We're not waiting on somewhere else to solve the problem for us," he said.

Delphine Dean, Ph.D., a professor in Clemson University's Department of Bioengineering, is leading Clemson's multidisciplinary effort. Clemson is working on two approaches at once, she said. It's working to scale up the number of blood-based antibody tests that it can produce, but it's also working to develop a point-of-care test that could use saliva or urine and would show a result in much the same way a pregnancy test does. But, she said, "The concentration of these antibodies in saliva is 1,000 times less than in blood," she said.

It's unusual to be developing both of these tests at once, she said. But then, it's unusual for the researchers at the three universities to be communicating daily so closely.

"One of the things that's exciting is that, A., we're all working together – it's unprecedented. We're working very fast to break down all the institutional barriers. The other thing is we're doing this very quantitative lab-based test and validation at the same time that we're developing the next level point-of-care fast test," she said.

MUSC scientists paused their regular work to jump into the project without hesitation. Tomlinson said his research already involves expressing and purifying proteins. "It was a quick and easy switch for us to change over to producing SARS-CoV-2 proteins. We successfully produced the proteins in a pilot study, but since the proteins have become commercially available, we halted further production."

Using the commercial protein has proved more cost effective, Nadig said, adding that it's good to have in-house

capabilities as a backup plan.

"That was a good move in terms of, 'Now we can be confident we can keep on going no matter what,' instead of depending on commercially available protein," Mehrotra agreed.

Nadig credited Mehrotra and Colleen Cloud, operations manager for the Center for Cellular Therapy, for making the project happen in record-breaking time, and the entire interdisciplinary team for stepping up.

"In three weeks, from being tasked with the operation of having an in-house assay to the final product, the clean cell facility was able to produce. It's been a whole can-do attitude to do this. It really shows an interdisciplinary perspective on the capability that MUSC has to get things done," Nadig said.

MUSC will first make the Abbott tests available to its workers who have patient contact. That includes not just those involved in direct patient care but also groups like security and facilities who are around patients, Scheurer said. Once the home-grown tests are validated and the three universities have sufficient quantities, it will make tests available to first responders and health care workers throughout the state, then to the broader community.

But, Scheurer cautioned, scientists are still figuring out what the results of those tests mean, on a practical level. A person may show SARS-CoV-2 antibodies, but we don't yet know how much protection those antibodies confer or how long the protection will last, she said.

"We're not recommending that health care workers make work choices based on the results," she said, while also noting that the tests are voluntary and confidential – supervisors will not have access to the results. But she thinks the results could give peace of mind to health care workers who are concerned they might bring the disease home to their families.

"It gives them some reassurance that they probably have been exposed, and they have mounted some protective response, but we don't want them taking that leap of faith to say, 'I don't need protective equipment. I don't need a face shield or a mask when taking care of a COVID patient,' or 'I have free rein from a social distancing perspective,'" she said.



Marvella Ford, Ph.D., associate director of cancer disparities at the Hollings Cancer Center, got into her line of work because of health disparities in her own family.

Photo by Sarah Pack

DISPARITIES *Continued from Page Ten*

American communities. In fact, pop-up testing sites began in certain zip codes the week of April 26.

"We're trying to leverage technology, but sometimes, it's just a matter of getting out and meeting people where they are," he said. "To accomplish this, we must get mobile vans and mobile hotspots into places, such as rural areas, where we can help create access to the internet. We're doing everything we

can to come up with a plan that will be supported and implemented."

Hughes-Halbert and Ford know it's a long battle, but they genuinely believe it is one that can be won.

"The good news is we have to remember we are one nation. What happens to one group affects all of us," Ford reiterated. "These disparities have been happening for decades, but now that they're in the forefront of everyone's conversations, we can come up with real solutions."

CELEBRATE *Continued from Page Seven*

"I think it's remarkable how Americans are pulling together – whether its celebrations at night for health caregivers in New York or somewhere in the South – we're blessed with a military flyover by the guard. All this recognition by others is just amazing to me."

These meaningful gestures of public

support have made a significant impact on everyone, said Patti Hart, DNP, R.N., MUSC Health chief nursing officer.

"This is what community is all about. This is what Charleston is all about. The nurses, the physicians, the police and fire department first responders – the entire care team partnering with the community is truly phenomenal. I so appreciate them."

she said.

The bigger questions are for policymakers. Scheurer hopes that widespread antibody testing will start to give leaders better information with which to make decisions, for example, determining what percentage of people have at least some antibodies. She suspects that number will be low, though. After all, of those who went through the virtual care screening and qualified to receive a COVID-19 test, only about 6% have tested positive – and these are all people who had symptoms, she said. But knowing how prevalent this coronavirus is should help leaders to figure out how to approach decisions and to help people support social distancing measures.

"All these things we're enduring are really life changing and very difficult to sustain – up to and including having school canceled. If people are going to make a medium- or long-term sacrifice, it's got to be because they truly understand what we're up against," she said.

There are people who are truly suffering because of the measures that have had to be instituted, she said.

"When you think about nursing home patients right now who have not had any contact with anyone other than their nurses for a month or longer – and there's no end in sight for them – those are real sacrifices that are going to be incredibly difficult to sustain for long periods of time."

MUSC Foundation to raise funds for COVID-19 testing during May 5 Giving Tuesday Now event

Staff Report

The MUSC Foundation will reach out to the community to help raise money for coronavirus-related testing on Giving Tuesday Now, scheduled for May 5.

Funds raised on that day will help pay for two kinds of testing - one to determine the presence of the disease and another to detect the presence of antibodies, indicating that the tested individual has recovered. This will be important as the university strives to help the community and businesses understand the prevalence of infection, identify new cases of COVID-19 more quickly and understand an individual's risk profile.

"Together, these two tests are important to get our economy back on track," said MUSC Health CEO Patrick J. Cawley, M.D. "In the short term, they will help us protect and rebuild our workforce in health care and in other sectors. In the longer term, they will enable us to understand the virus' true prevalence, which in turn will help us navigate any outbreaks that might occur in the future.

MUSC Health currently is capable of performing about 900 disease tests a day, up dramatically from four weeks ago. Thanks to philanthropic funds that were used to purchase a state-of-the-art piece of testing equipment, that capacity will be doubled.

This week, antibody testing began at MUSC Health for frontline health care providers, to be followed by at-risk patients and first responders. Its long-term goal is to make this testing available to the general community as funding becomes available. MUSC has dedicated \$500,000 of its own funds to the effort.

Money raised on Giving Tuesday Now will help pay for both tests, plus delivery systems to reach people in rural areas and other underserved communities.

Donations to the MUSC Covid-19 Testing Fund can be made online at give.musc.edu/Tuesday or by phone at 843-792-2678. Thank you for changing what's possible during this unprecedented health crisis.

Questions related to the testing process or roll-out, please contact Heather Woolwine, MUSC Office of Public Affairs, at woolwinh@musc.edu.

These are unprecedented times for our MUSC Employees & community...

Are you concerned about feeding your child in the weeks to come as we navigate the COVID-19 outbreak?



The MUSC Pantry Project

Free pre-packaged shelf-stable food for your children*

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 • 6:30 pm - 8:00 pm
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Where to pick up:
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Who is eligible?
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