

Photo Provided

Department of Emergency Medicine's Dr. Diann Krywko advocated for safe, quiet spaces to aid employees during the pandemic. She partnered with Lowcountry businesses to create an outdoor breakroom for care team members.

Donations, volunteers make outdoor oasis possible for front-line workers

BY MELISSA VARNER

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As director of wellness, health and resilience for the Department of Emergency Medicine at MUSC, it's up to Diann Krywko, M.D., to look out for her team's well-being – a much bigger job during the COVID-19 pandemic.

"March, April and May were exceedingly stressful," Krywko explained. "Not because of the number of COVID cases. But because of the anticipation, not knowing what was about to happen. That was very stressful to the front-line workers."

Adding to that stress were limited safe, quiet spaces to take a break. The closest option was a small, indoor breakroom that didn't allow for social distancing.

Krywko found inspiration in the parking lot, behind the makeshift waiting room at the emergency department entrance on Jonathan Lucas Street: She could turn the space into an outdoor breakroom! First, she called Lowe's in Mount Pleasant to see if they would donate picnic tables. "Without even thinking about, the manager said, 'How many do you need?' Isn't that amazing?"

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MUSC COVID tracking expert: 'I think we're going to see a big surge coming up'

BY HELEN ADAMS

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As the Charleston area deals with an almost 50% increase in COVID-19 cases over the past week, the leader of MUSC's COVID tracking team is warning of a challenging time ahead.

"I think we're going to see a big surge coming up," said Michael Sweat, Ph.D. "South Carolina is starting to light up. The numbers here aren't as bad as they are in a lot of other places, but the growth rate is not looking good."

Sweat, who directs the MUSC COVID-19 Epidemiology Intelligence Project, points to three factors that could drive a new winter surge.

First, while the holidays were far from normal, people did travel and get together with family and friends from outside of their households. "I think people get infected in their networks, visiting people over holidays. And then there's sort of a second wave that happens before people catch on. Those people then infect other people, on and on, until people start realizing there's a problem. And that takes several weeks."

Second, cooler weather has pushed people inside, where the coronavirus can spread more easily.

And third, COVID-19 is mutating. One of its variants is so contagious that it just triggered a new lockdown in England. That variant has been found in



Sweat

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As new COVID-19 strains emerge, experts emphasize importance of staying home

By HELEN ADAMS
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A nationally known infectious diseases expert at MUSC says the new coronavirus strains that emerged in the United Kingdom and South Africa show the need to double down on public health measures and get as many people as possible vaccinated.

“The sooner we can get the pandemic under control and prevent the virus from spreading like wildfire the better, because it will prevent the virus from being able to mutate further,” said Krutika Kuppalli, M.D.

Kuppalli serves as an assistant professor in the Division of Infectious Diseases at MUSC, an Emerging Leader in Biosecurity Fellow at the Johns Hopkins Center for Health Security and vice chair of the Global Health Committee for the Infectious Diseases Society of America.

Over the weekend, British Prime Minister Boris Johnson said the new variant in the United Kingdom is 70% more contagious than other strains. Some countries have banned flights from the U.K. to try to slow the spread. Meanwhile, another variant has caused a resurgence of COVID-19 in South Africa. The mutations involve the spike protein that the coronavirus uses to infect people.

“We expect viruses – especially RNA viruses, which is what the coronavirus is – to mutate,” Kuppalli said. “We’ve had other mutations previously in the pandemic. It’s not surprising we’re seeing these things. The thing that’s concerning is that this appears to be more transmissible than other ones. There’s still a lot of information we don’t know.”

Kuppalli said the question of whether the coronavirus vaccines will work against the new strains came up over the weekend at a meeting of Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices. “They are monitoring it. Things so far look good.”

But vaccines aren’t a reason to ease up on things like mask wearing, hand hygiene and social distancing, Kuppalli said. “We need to figure out numerous ways to control the coronavirus. The vaccine is not a magic bullet. It’s using the vaccine in addition to our public health measures. A large part of this is in our control.”

She’s encouraging people to stay home for the holidays. “I know it’s a big ask. I know people want to see their family, they want to see their friends. But we know what to do. We have the public health tools. We have a vaccine that is on its way that we’re rolling out as quickly as

See **STRAIN** on page 11

Politics and Policy in the New Year

Event Date: Thursday, Jan. 28
2-3 p.m.



Soura

Please join us at the next MUSC Health Policy Symposium for a breakdown of the November elections and health policy outlook for the new year.

This virtual event will feature Christian Soura, executive vice president of the South Carolina Hospital Association. Soura is an expert on federal and state health care financing and policy, having previously served as director of the South Carolina Department of Health and Human Services, president of the National Association of Medicaid Directors and deputy chief of staff to Gov. Nikki Haley.

The symposium will offer insights into potential payment reform and the future of COVID-19 policies, including temporary telehealth flexibilities and stimulus relief.

This is Soura’s second time serving as our symposium speaker, and we look forward to hosting a dialogue on recent changes at the State House and White House and on Capitol Hill and the projected impact on MUSC.

**Registration is required: <https://redcap.link/MUSCPolicy>.
With questions, contact Allie Dodd, dodda@musc.edu.**

**MUSC designates this live activity for a maximum of 1.0 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.*

MUSC CATALYST news

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1. Lather away.

- back of your hands
- between fingers
- under the nails

2. Scrub.

- Count to 20.

3. Rinse well.

4. Dry completely.

- using a clean paper towel or an air dryer.



MUSC Libraries



Letter from the
Office of the

PRESIDENT

Dear MUSC family,

I am certain that we are all ready to put 2020 behind us – it was a year that involved an incredible amount of work, tenacity, loss, resilience and sacrifice from our team and the larger community. I'm looking forward to a very positive 2021, starting with the fact that we've reached a major inflection point in our pandemic journey as COVID-19 vaccines make their way into the population locally and nationally.

Across the MUSC Health system, we have pushed hard to complete our organizational Phase 1a vaccination distribution plan, as part of the vaccine allocation guidelines set forth by the Centers for Disease Control and Prevention Advisory Committee on Immunization Practices.

At MUSC, Phase 1a and its three waves included health care



Cole

Care Team Members Vaccinated as of 1/4	
Charleston	63%
Lancaster	44%
Florence	42%

providers who directly touch or work within 6 feet of patients or individuals whose roles are critical to the function or operations of patient care delivery. This past weekend, we officially opened up vaccine administration to individuals outside the organization who qualify for Phase 1a, which includes select frontline health care providers and first responders in the larger community. This phase will likely last one to two months.

For more information about the vaccination roll-out schedule, please keep an eye out for official MUSC Health and organizational emails or visit the vaccination website. In accordance with state and federal allocation guidelines, we are distributing the Pfizer vaccine exclusively at this time, since our system has access to and capacity with sub-zero freezers for necessary storage. In general, hospitals or facilities without this type of storage are administering the Moderna vaccine.

MUSC receives weekly shipments of the vaccine, so as you can imagine, the coordination of registration, scheduling and distribution is a complex process that requires incredible diligence so that not one single dose of the vaccine is wasted.

Despite this enormous step forward in recent weeks, the unfortunate reality is that across the nation and in many parts of South Carolina, the virus is surging. If current projections hold true, some very difficult days and weeks are still ahead of us. We are seeing increases in hospitalizations across all of our MUSC Health facilities, and, no doubt, you are aware of the serious situation faced by our fellow citizens in the Upstate. I remain confident in our teams and the daily monitoring and planning that continues as more patients seek our care – for COVID-19 or otherwise.

I encourage you to continue monitoring our MUSC COVID-19 Epidemiology Intelligence Project for weekly updates related to infection rates, hospitalizations and other important information connected to our organization. You may also find it helpful to monitor the South Carolina Department of Health and Environmental Control website as well.

It is important to understand that now more than ever, we must stay the course. Please, continue to make safe and smart decisions for yourselves, your families

MUSC increases patient contact, education about research opportunities

Staff Report

MUSC is finding new and improved ways to bring research to our community with the purpose of working together to change what's possible. The need for innovative health care strategies is greater than ever. The COVID-19 pandemic has brought worldwide attention to the critical importance of research in the discovery of effective and safe methods to prevent, diagnose, treat and cure diseases.

Research discoveries may start in the lab but must be brought into the clinical setting to ensure the best possible outcomes for our diverse community. Every member of the community should have the opportunity to learn how to become a part of the research process, to experience any benefits that might come from that participation and to contribute to the overall health and well-being of the greater community.

What does that mean for the MUSC community? You will soon notice an added emphasis on educating our patients about research opportunities and empowering them to participate in studies. This means that researchers at MUSC will be taking a more active role in contacting patients to inform them of study opportunities that might interest

them. Nonetheless, every patient has the choice to accept or decline to participate in a study and/or to “opt-out” of potential research opportunities. Should a patient prefer not to be contacted, that directive is followed.

We believe that our obligation, as a leading academic medical center, is to offer the very best care to our patients and this includes providing increased research awareness and opportunities. We look forward to the community's increased involvement in the research process and the resulting impact on discovery and treatment at MUSC.

To learn more about clinical trials at MUSC, visit muschealth.org/trials.

Upcoming MUSC Diversity, Equity and Inclusion Training

The MUSC Office of Diversity, Equity and Inclusion is offering virtual training opportunities in January 2021.

Effective Allyship – 10 a.m. to noon, Tuesday, Jan. 12 (2 hours training D&I training credit)

Embracing Generational Differences – 10 a.m. to noon, Friday, Jan. 15 (2 hours credit)

Appreciating Diverse Experiences – 9 a.m. to 1 p.m., Saturday, Jan. 23 (4 hours credit)

To register, refer to the MyQuest D&I training catalog or email Paula Sutton at suttonp@muscedu.

and loved ones. Get vaccinated as soon as you are eligible. Continue to get tested and encourage others to do the same. Keep wearing your masks, wash your hands frequently, social distance and work together to protect those at greatest risk.

We have the tools to beat this virus and minimize unnecessary suffering; we just need to keep using them – for as long as it takes.

Yours in service,

David J. Cole, M.D., FACS
MUSC president

Drug developed in part by MUSC holds promise for prostate cancer treatment

BY KELSEY HUDNALL

adamshel@musc.edu

With a goal of improving survival for men with metastatic prostate cancer, researchers from MUSC Hollings Cancer Center are testing a new drug that may help to expand treatment options for patients whose disease is progressing despite treatment with standard therapies. The study will also examine patients' genetic profiles for clues as to which men may be more responsive to the new therapy.

The investigational drug, called opaganib, is no stranger to Hollings researchers, as it was developed in part at MUSC through the work of Charles Smith, Ph.D., and Besim Ogetmen, Ph.D. The first-in-human trial was also conducted at MUSC, with the results showing that the drug was well-tolerated and provided some clinical benefit.

Opaganib works by selectively targeting an enzyme that regulates the balance between two types of lipids in the body: one that is more likely to help the cancer to grow and spread, and one that is more likely to cause the cancer cells to die. As far as the researchers know, the drug is the only one in development that can shift this balance to create more of the lipids that help to kill the cancer cells.

Because of the way it works, opaganib may provide benefit in multiple cancer types and has already been tested in both gallbladder cancer and multiple myeloma. The drug is also currently being tested as a potential treatment for patients with severe COVID-19-related pneumonia.

In this Phase II trial led by Hollings oncologist Michael Lilly, M.D., men with prostate cancer that has spread to other parts of the body will be enrolled once they have begun to lose benefit from standard treatment with hormone-blocking drugs, which are used to lower the body's testosterone level and starve the cancer. When the cancer learns to

"outsmart" these drugs and grow, despite low levels of testosterone, the hormone-blocking drugs become ineffective, and patients are typically placed on chemotherapy.

"While chemotherapy has benefits, it also has side effects, and most people would rather have a treatment like opaganib that is taken orally than something that requires frequent IV infusions," said Lilly. "We believe there's a need for developing additional oral agents, particularly ones that don't act as hormone-blocking agents."

Developing new classes of drugs to treat metastatic prostate cancer is critical, said Lilly, because hormone-depleting drugs and chemotherapy are currently the only treatment options for these patients. While both treatments typically provide some benefit to patients, both eventually stop working, often within a few months.

"There's a limited amount of new territory you can explore with those agents. There are only so many ways you can reduce testosterone, and while we have dozens of chemo drugs, the majority have little or no activity in prostate cancer," said Lilly. "We need some fundamentally new drugs that have different targets, different properties and different side effect profiles. We're delighted to see patients respond to chemotherapy and hormone-blocking drugs, but we need treatments that will work for years."

The trial will enroll roughly 60 men across multiple sites, including Hollings and Emory University. Participants in the trial will receive opaganib orally twice per day, in addition to continuing the standard hormone-blocking drugs, to determine whether adding this investigational drug into the mix can slow or halt the cancer's progression. Participants will remain on the drug for a minimum of four months, assuming there are no adverse events, and they can



Photo by Emma Vought

Dr. Michael Lilly is leading a Phase II clinical trial that could lead to additional treatment options for prostate cancer patients.

"We're delighted to see patients respond to chemotherapy and hormone-blocking drugs, but we need treatments that will work for years."

Michael Lilly, M.D.

remain on the treatment for as long as there is some benefit and tolerable side effects.

If the drug shows some efficacy in treating prostate cancer, researchers plan to explore other combinations, such as using opaganib earlier in a patient's treatment or using higher doses.

While the trial is still in its early stages, Lilly is thrilled that the trial's first patient, who was enrolled more than seven months ago, is doing well and has seen some obvious benefit.

"We hope this study will make a difference by giving patients additional treatments that will reduce the growth of their cancer and thus improve how well and how long they live," said Lilly. "It's

an exciting field to be able to work in — to develop something new that will hopefully benefit patients."

The study will also examine the genetic profiles of patients who are enrolled to see if there are any markers that potentially could identify patients who would respond well to the drug. They hypothesize that patients who have a particular genetic mutation may be most sensitive to the drug, but more information is needed to know for sure.

Aside from the benefits the trial could bring to patients with advanced prostate cancer, Lilly is proud to lead this investigator-initiated study as an example of Hollings' commitment to bringing new discoveries to the bedside.

"A critical mission for the cancer center is bringing in the newest, most innovative types of treatments and making them available to our community," said Lilly. "This early-phase, novel work is oriented toward identifying a whole new way of treating cancers."

Anyone interested in learning more about this trial or wishing to participate can contact hcc-clinical-trials@musc.edu.

This research is supported by the National Cancer Institute (grant CA203628).

MEET MONICA



Monica E. Wigfall

Department; Years at MUSC
Women's Health–Revenue Cycle; 17 years

How are you changing what's possible at MUSC

By taking care of patients and their needs. When patients say, 'I'm the best, and I wish I can take you home with me' or tell me I'm loved, it inspires me. I enjoy working at MUSC.

Home
Trinidad and Tobago

Family and their names
Husband, Charles; daughter, Natasha; and sons, Rohan, Sean, Kieon and Michael

Music currently playing in your player
Anything calypso — I love that music!

Favorite wintertime memory
Living in New York, walking the dog and kids playing in the snow

Food that's a must-have in the fridge
Oxtail soup and other snacks

Something relaxing to you during COVID
Cleaning and keeping a safe family home

Your benefits on-the-go

Make your phone your go-to resource for accessing your insurance benefits information. Mobile apps are available for your health, dental, prescription, vision and flexible spending benefits.

BlueCross BlueShield of South Carolina
 Search for My Health Toolkit®
 Health and dental benefits

- Learn about your coverage.
- Check status of claims.
- Access your identification card.
- Find a doctor or hospital.

EyeMed
 Search for EyeMed Members.
 Vision benefits

- Learn about your coverage.
- Set eye exam and contact lens change reminders.
- Access your identification card.
- Search for network providers.

Express Scripts
 Search for Express Scripts.
 Prescription benefits

- Check if a drug requires prior authorization and compare drug prices.
- Refill and renew mail order prescriptions.
- Access your identification card.
- Locate a network pharmacy.

ASIFLEX
 Search for ASIFlex Self Service.
 Flexible spending accounts

- Submit and view status of a claim.
- Submit documentation.
- View account statement.
- Find information about your account.

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Ear, Nose & Throat

Are you worried about getting a virus this Fall?

MUSC seeks qualified clinical study participants for a clinical research study for the treatment of:

- Upper Respiratory Infection

MUSC is performing a clinical trial to study whether a new device can prevent upper respiratory viruses.

- Treatment takes a few minutes from home
- All visits done remotely
- Ideal for people at high-risk for viral infection due to occupation or children

SnuSonic

For clinical research study participation contact:
 Matthew Gerrooth 843-874-1146, gerooth@musc.edu

MUSCHealth.org/en | 843-170-6294

MUSC Health
 Medical University of South Carolina

IRB Number: Pro00100960
 Date Approved: 10/6/2020

Changing What's Possible

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go.cofc.edu/MLK

gospel choir performances
 tributes from each institution remembering
Martin Luther King, Jr.
 recognizing
Martin Luther King, Jr.
 honorees

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Imagine U

Building Well-being Together

A DIGITAL WELLNESS PROGRAM FOR ALL MUSC EMPLOYEES

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

- Physical Activity
- Nutrition & Weight Management
- 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!

FOR QUESTIONS OR PROGRAM SUPPORT: IMAGINE-U@MUSC.EDU

Women's health expert shares what she wishes more women knew about cervical cancer

By KELSEY HUDNALL

adamshel@musc.edu

Jerlinda Ross, M.D., had her heart set on entering women's health care to become a maternal fetal medicine physician. She loved helping women through their birthing journeys, from conception through watching the baby grow until delivery. But it wasn't until a rotation during her second year of residency training that she discovered her true, unexpected passion: helping women navigate the ups and downs of cancer.

Now the oncologist at MUSC Hollings Cancer Center and assistant professor of Obstetrics and Gynecology enjoys connecting with her patients on a personal level while helping them to

achieve the best possible quality of life and the longest amount of time with their friends and families.

"The thing I try to remember in my practice is that it's easy to become focused just on treating a patient's cancer. But, when you have the time to get to know these patients, you realize there's a lot more to them than their cancer," said Ross. "You get to learn what they like, what they do and more about their families. I like getting to be with a woman through diagnosis, treatment and, hopefully, through a cure."

January is Cervical Cancer Awareness Month, spotlighting what used to be the leading cause of cancer deaths for women in the U.S. Over the last few decades, a drastic uptake in regular screenings and



Photo by Emma Vought

Dr. Jerlinda Ross encourages women to get vaccinated against human papillomavirus (HPV) and to get their regular Pap smear screenings to help to reduce the risk of developing cervical cancer.

the human papillomavirus (HPV) vaccine have significantly decreased the number of cervical cancer cases and deaths, as changes in the cervix can either be prevented or detected before a cancer develops.

Here, Ross shares why she's passionate about gynecologic cancer care, what she wishes more women knew about cervical cancer and how research can help to reduce disparities that exist in women's cancer care.

Cervical Cancer Q&A

Q: What are some things most women don't know about cervical cancer that might surprise them?

Oftentimes, cervical cancer affects women who are quite young. It's most frequently diagnosed in women who are in their 30s and 40s, with the average age at diagnosis being 50. However, 20% of cervical cancers are also diagnosed in women over age 65. After women go through menopause, they may not be getting their annual pelvic exam and the routine screenings that they need, including a Pap smear and HPV testing. Women need to know that just because their periods have stopped does not mean that their risk of developing cervical cancer has disappeared.

Women may also not be aware that getting an annual Pap smear can detect changes on the cervix before a cancer develops and can identify early-stage cancers while they are still small and can be more easily treated. Most cervical cancers develop in women who haven't undergone a Pap smear in the last five years, and of the women who do develop cervical cancer, most don't experience any symptoms until the cancer has grown and spread. At that point, treatment options may be limited.

Q: What are some of the risk factors for developing cervical cancer?

HPV infections cause more than 90% of cervical cancers. Most women who are sexually active will encounter or acquire an HPV infection at some point in their lives, which is why it's so important for both men and women to get the HPV vaccination.

Some lifestyle choices can also contribute to cancer risk, such as being overweight, not getting enough physical activity and smoking. Most women don't

know that cigarettes and tobacco products produce chemicals that can damage cervical cells, which over time can lead to cervical cancer. There is also a link between cancer and obesity. Maintaining a healthy weight can help to protect patients who already have cancer from developing a second cancer type and can prevent secondary illnesses — such as diabetes and hypertension — which can affect which types of chemotherapy and surgery a woman may receive during cancer treatment.

Q: What health disparities exist in gynecologic cancer care and specifically within South Carolina?

The biggest disparity in South Carolina is access to specialty care for gynecologic cancer. The state has a high percentage of residents living in rural and medically underserved areas, and people who live outside of a city may have to drive for hours just to have an initial consultation or to get an initial workup to determine if they have a cancer. This can cause delays in diagnosis and care, which will ultimately affect a patient's long-term survival.

Some of the biggest social and cultural disparities in gynecologic cancer care also relate to clinical trials. Because of historical events that led to the mistreatment of minority groups and immigrants, these groups are often less likely to enroll in a trial, even though these trials can be quite helpful to them. Studies show that these women often do worse on the standard of care, and it may be something specific about how these groups respond to certain medications, but we can't get them in enough clinical trials to find out what's happening. This limits us from being able to find out whether these drugs work for them.

Q: What research is being done to address gynecologic cancer care disparities?

One of my research interests is using geospatial technology to "geo-code" a

See CERVICAL on page 12

Kidney doc wants more patients to benefit from transplant

By LESLIE CANTU

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South Carolina has one of the lowest kidney transplant listing rates in the nation – in other words, fewer people who could benefit from kidney transplants are even getting in the line for one. The barriers are multiple – geographic, financial and the ability to navigate complex health care systems.

But that has started to change in the past couple of years as MUSC Health has worked to bring its transplant expertise to every corner of the state, including satellite clinics in Myrtle Beach, Florence and Columbia. In 2020, despite the pandemic, it opened a transplant clinic in Greenville, and in December, members of the transplant team began to see patients in the new clinic in Bluffton.

A key hire has also made a big difference for the transplant team's work. Transplant nephrologist Carlos F. Zayas, M.D., joined MUSC Health in January. Based in Greenville, he travels the state to see patients at each satellite location. Though he is new to MUSC Health, he is not new to South Carolina. His deep ties with community nephrologists and his passion for this work have made a big difference in MUSC Health's ability to connect with patients, said Prabhakar Baliga, M.D., chairman of the Department of Surgery at MUSC.

"Carlos has a very strong zeal for patient care, more than many physicians," Baliga said.

That zeal goes back to his days as a medical student and resident. Initially, he was drawn to nephrology because he enjoyed the science of it and was impressed by watching the kidney doctors apply concepts from cardiology, pulmonology, internal medicine, infectious disease and rheumatology. But he also saw how much time the doctors spent dialyzing patients.

"These patients are slaves to these machines that keep them alive. Kidney disease, just treated with dialysis alone, takes so much out of the patient," he said.

People on dialysis are dependent upon a machine for hours each week to remove waste products and extra fluid from their blood – their kidneys' normal function. The process not only steals much of patients' physical freedom but their mental well-being, Zayas said. Nephrology began to look less attractive as a specialty.

Then he did his first rotation in transplant. Suddenly he saw people who had been completely dependent upon a dialysis machine return to work, have children, play sports and plan weekends away with their families.

"I discovered the beauty of transplant and said, 'This is what I want to do the rest of my life,'" he said.

Now, he evangelizes the power of transplant wherever he can. "Transplant is by far the best option for people



Photo by Sarah Pack

Dr. Carlos F. Zayas works out of MUSC Health clinics throughout the state to support transplant patients.

with terminal diseases," he said. And as a doctor of Puerto Rican heritage, he feels an especially strong pull to advocate for underserved communities.

"I feel like I'm called to help those underserved patients – minorities, either underserved minorities from the origin standpoint or financial standpoint or resources standpoint," he said. "I feel like I'm called to be an engine of change, for facilitation for these people."

Zayas has another connection with patients.

"I'm a transplant patient myself. I received two bone marrow transplants. So, I've gone through this as a physician but also as a patient," he said.

Zayas said the Southeast has a higher concentration of people with kidney disease. High blood pressure and Type 2 diabetes are the leading causes of kidney disease in the U.S. Further, poverty, the distance to specialists and lack of health insurance mean people don't get care until they are very sick and qualify for Medicare coverage of dialysis or transplant.

Even once someone has reached the stage of needing a transplant, there are numerous hurdles that must be cleared, including cardiac and cancer testing, funds for medication, social support post-transplant and transportation for follow-up visits, Baliga said.

MUSC Health has a robust kidney transplant program with excellent outcomes, he said, but in the past, the program has been difficult to access for people farther from Charleston.

"The challenge for MUSC is to provide this level of care across the state, as we hold a special responsibility by being the only transplant program in the state," Baliga said.

Thus, the importance of having Zayas there to connect with patients – and their local doctors, who may worry about getting information once they send their patients into a large health system.

"I'm the kind of guy that gives all the referring doctors my cell phone. I will answer day and night, weekends, on call or not on call, in town or out of town. I will always be there," Zayas said.

Telemedicine has also made a difference in MUSC Health's reach. Prior to the pandemic, the transplant program had started building its telemedicine presence, but the pandemic pushed both providers and patients to become more comfortable with virtual visits, said Daniel Stanton, administrator for the Transplant Service Integrated Center of Clinical Excellence.

"Our patients understand the benefits because almost

See **TRANSPLANT** on page 11

MUSC Health begins monoclonal antibody treatments

By LESLIE CANTU

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As MUSC Health begins a widescale, months-long vaccination program against the novel coronavirus, it has also gained a new tool to treat COVID-19.

The health system began treating eligible patients with a monoclonal antibody infusion in November. Similar to convalescent plasma, this treatment injects antibodies directly into the patient's bloodstream. Whereas convalescent plasma comes from recovered patients, the monoclonal antibodies are created in a lab.

Leeann Bauch, director of nursing for perioperative and procedural services at MUSC Health, was the first patient infused here, on Thursday, Nov. 19. She said her recovery was remarkable, and in stark contrast to the weeks of dragging that a friend felt after contracting COVID.

"Thirty-six hours after the infusion, which was Saturday morning, I was cleaning my house. I still had some chills, but by Sunday, I felt like I had never had COVID," she said.

By coincidence, Bauch had attended a presentation about the drug, called bamlanivimab, on the previous Monday, when she started having symptoms.

By the time she got home Monday, she decided her symptoms "checked off too many boxes," so she did a virtual urgent care visit and scheduled a COVID test for Tuesday. Despite her symptoms, she still thought it was likely a gastrointestinal bug and was working on her phone as she sat in the car at the COVID drive-through testing site in West Ashley. Wednesday, though, her test results came back positive.

She knew the team was looking for patients to receive the treatment and thought she qualified, and her doctors agreed.

Bauch qualified for the treatment because of her high-risk status. In February, she had been diagnosed with tracheomalacia, a weakness in the cartilage in her trachea that could cause blockage in her windpipe, putting her at high risk for intubation.

Bamlanivimab and a similar monoclonal antibody treatment crafted by Regeneron received emergency-use authorization (EUA) from the U.S. Food and Drug Administration to treat people with mild to moderate symptoms who are at high risk of severe illness. Those at high risk include people over the age 65, people over the age of 55 with certain preexisting conditions such as heart disease and lung disease, people with diabetes or chronic kidney disease and people with a body mass index over 35.

Vanessa Diaz, M.D., medical director for Care Coordination for the MUSC Health Primary Care Integrated Center of Clinical Excellence, said the



Patient Leeann Bauch poses for a selfie with nurses Jassmine Baghdady and Kelly Zimmerman who administered the monoclonal antibody infusion and monitored Bauch afterward.

Photo Provided

treatment must be given within 10 days of symptom onset – and preferably sooner. The antibodies work by binding to the coronavirus and blocking it from replicating, so it will work better if the virus has had less chance to multiply. That's why it's important that people get tested as soon as they begin showing symptoms, she said.

"When somebody comes in with symptoms, don't wait until they get sicker to get COVID testing, because we might miss that window of them being eligible for

the infusion," Diaz said.

The infusion itself takes about an hour. Patients must then be monitored for side effects for an hour afterwards. Because the drug is still in emergency-use status, patients are asked to report any issues that occur within a week.

Though the drug is considered investigational, Diaz said the trial results that led to the EUA were promising: While 10% of the placebo group ended up

See **INFUSIONS** on page 10

Clemson University's eligible front-line workers receive COVID-19 vaccines, thanks to MUSC

Staff Report

Clemson University and the Medical University of South Carolina (MUSC) are proud to announce that Clemson's front-line workers classified as phase 1A received COVID-19 vaccines through the longstanding partnership between the two institutions.

Among those receiving vaccines are Clemson Rural Health clinicians and team members; Healthy Me-Healthy SC Rural COVID screening teams; Redfern Student Health Services medical personnel and staff; School of Nursing faculty and staff involved in clinical care; and first responders on campus, like Fire and EMS. In a powerful collaboration led by MUSC, in which they are providing the vaccines, as well



as command staff and clinical and IT support, Redfern is providing medical oversight and personal protective equipment, and Clemson Rural Health is providing clinical support and medical surveillance.

Many of Clemson University employees who received vaccines have been responsible for COVID-19 efforts on campus related to employees, faculty, staff and students since March. According to Caitlin Kickham, associate director of Clemson's Joseph F. Sullivan Center, front-line workers are incredibly grateful to partners at MUSC who have made these vaccination efforts possible. Kickham said college and university leadership are proud of the tireless work of all Clemson University team members who have been on the front lines of the COVID-19 response since March.

Bouncing back from debilitating spine fractures: Innovative procedure uses balloons, cement

BY MARK RICHENS

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Lynn Shetley is one of more than 10 million Americans with osteoporosis, a disease marked by porous, brittle bones that can break more easily than healthy bones. Osteoporosis is most prevalent in women over 50. In fact, these women – like Shetley, who is 70 – have a 1-in-2 chance of breaking a bone due to osteoporosis.

A few years ago, while living in California, Shetley took a DXA, or dual X-ray absorptiometry, bone density scan that showed her osteoporosis was becoming more severe.

“My physician was just watching my scores get worse and worse. My T-score went down to a minus 4.9, and it scared the hell out of me,” she said, referring to how much her bone mass she’d lost, compared with that of an average healthy 30-year-old adult.

Soon after, Shetley’s husband died, and she moved to Mount Pleasant, South Carolina, to be closer to her family. She visited a doctor who prescribed a medication to try to reverse her bone loss. After a couple of years, Shetley’s bone density scores improved, and she decided to stop receiving the twice-yearly injections of her osteoporosis drug.

“My brother was ill in California, and I went out there to try to help, and then he passed away,” Shetley said. “I was just being bounced around on airplanes and stuff. So when I had a sore back when I got home, I did not think it was really much more than a sore back, you know? And then it just kept getting worse. Bending, lifting, anything – the pain was constant, and it wasn’t getting better – it was getting worse, so then after about four weeks, I went in, and I said something to my doctor.”

Shetley had an X-ray that found she had two vertebral compression fractures (VCF) in her spine – in other words, a broken back. Then her doctor ordered an MRI to get a better look. Thor Johnson, M.D., Ph.D., an MUSC interventional radiologist, read the MRI studies.

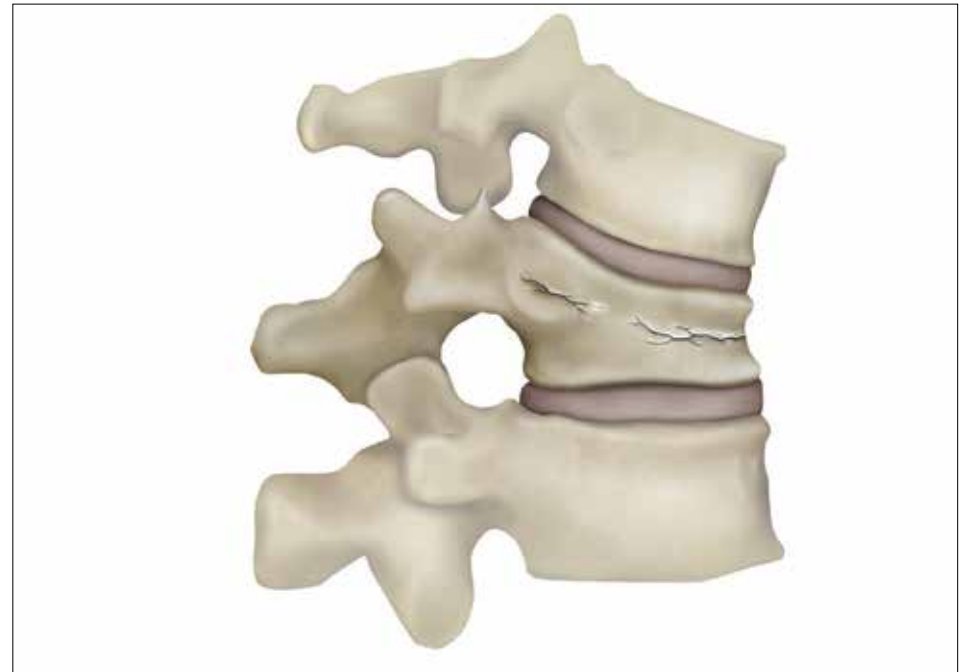
“I called the primary care physician and said, ‘Hey, is your lady having a lot of pain? It looks like she’s fractured two vertebral bodies,’” Johnson said. “She said Lynn was having severe pain. She couldn’t sleep, and she was having trouble walking and that sort of thing. And then then the PCP sent the patient to me.”

Johnson recommended Shetley undergo a procedure called balloon kyphoplasty.

Balloon kyphoplasty is a minimally invasive procedure for the treatment of spinal fractures due to osteoporosis, cancer or noncancerous tumors. Guided by live imaging, Johnson created two tiny openings at each fractured level in Shetley’s back and used a needle to insert a tiny balloon into each of the damaged vertebrae. He then inflated the balloons to restore the original height of the vertebrae. Finally, he injected acrylic bone cement into the cavity left by each balloon, creating an internal cast to repair each of the fractures.

Shetley was amazed at the results of the hour-long outpatient procedure, which has undergone numerous improvements since its original launch in 1998.

Medtronic, a leading medical device company, developed the balloon kyphoplasty procedure to relieve pain, restore vertebral height and stabilize VCFs. Since its initial introduction, Medtronic has developed better balloons, an improved cement delivery system and added access tools shown to reduce hand



Medical images courtesy of Medtronic

This illustration shows what a fractured vertebra look like before treatment with balloon kyphoplasty.



Tiny balloons are inserted into the damaged vertebra and inflated to restore the original height of the vertebrae.

radiation exposure for the surgeon. Over the years, studies comparing balloon kyphoplasty to nonsurgical management have shown that balloon kyphoplasty produced better pain relief and quality of life for patients, like Shetley, with acute VCF compared to patients treated with nonsurgical management.

“When you have the procedure done, the pain immediately stops. It’s just phenomenal. And I felt good, and I was walking more around the block.”

A few weeks after her procedure, Shetley had an unpleasant surprise.

“I went in for the standard follow-up, and I was shocked when he said, ‘You have another fracture.’”

So just two months after her first balloon kyphoplasty, Shetley had another, which was also successful. Johnson said this pattern is unfortunately typical of patients with osteoporosis who have spine fractures.

“Obviously, the more compression fractures you get, the more likely you are to have subsequent compression fractures,” Johnson said. “So, the first two, she got unlucky, but you know she’s had three, so the risk of having another one is very high. I’m trying to prevent her from developing a severe kyphosis, which happens to these people when

See SPINE on page 11

In the fight of his life, David Zaas found peace of mind by enrolling in a clinical trial

BY KIMBERLY MCGHEE

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When his doctor told him that he had acute myeloid leukemia (AML) and less than a 1 in 5 chance of survival, David Zaas, M.D., thought first of his wife and how badly he wanted to see his two teenage children grow up. He wanted every opportunity to win his battle, and the opportunity to enroll in a phase 1 trial ensured that he was doing everything possible.

Clinical trials are the only way to access innovative investigational drugs that could improve the odds of survival for patients, like Zaas, who are facing limited treatment options and poor prognoses. Participating in these trials could not only benefit these patients but impact many others, as the trials could lead to breakthrough discoveries and new treatments.

“Seeking out clinical research for me was the chance to say, ‘I’m going to do everything I can to improve those odds and beat this disease,’” said Zaas. “I wanted to be convinced that I was going to do everything I had to do to see my kids grow up.”

That was 2017, when Zaas was president of Duke Raleigh Hospital. He took a leave of absence to go to Johns Hopkins University in Baltimore, Maryland, to participate in the trial of a new drug for AML, one of the first in 30 years.

“I remember the night I got admitted, and we talked about the research, and we talked about the medicine,” said Zaas. “When the physician left the room, I looked at my wife and said, ‘Whether I live or die, I’m okay right now. We have sought out options and found what we think is the best thing out there. And we’re going to take a risk and go for

it.’ Psychologically, it was important to me as a patient to feel that I was doing everything I could to find the newest and greatest treatments and that I had access to them.”

Zaas knew that in choosing to enroll in a clinical trial, he was accepting a degree of risk. The medication was still in early-phase clinical trial to determine whether it was safe and effective, and so there was no guarantee that it would work. In the case of Zaas’s trial, the study drug was found to be effective and increase survival of patients with AML.

Today, Zaas, who says he’s in the best shape of his life, is the CEO of MUSC Health-Charleston. He is charged with improving the health care of patients in the Tri-county region, and he believes that one way of doing so is by making patients more aware of clinical trials.

As a physician-scientist, Zaas knew how to access clinical trials that were pertinent to his condition and his risk factor profile. But he fears the general public might have difficulties doing so.

“We need to create more visibility for clinical research for those patients who want to pursue it, whether they want to pursue it because they believe that it will benefit others, or if they’re like me, and they really want to do whatever they can and are willing to take that chance,” said Zaas.

In January 2021, to help to get the word out, MUSC research staff will begin reaching out to patients about clinical trials and studies that might be good fits for them. If a patient is interested, the staff member will describe the overall design and purpose of the study as well as potential risks and rewards. It will be up to the patient to decide whether to participate. A patient can pass on any given study or opt out of study notifications entirely.



MUSC Health-Charleston CEO Dr. David Zaas.

“Giving patients options and choices and access to clinical research is part of our mission at MUSC and part of our mission as a leading academic medical center,” said Zaas.

Learn more about clinical trials and efforts to raise patient awareness of them at muschealth.org/trials. Watch that page for more stories from clinical trial participants.

INFUSIONS *Continued from Page Eight*

hospitalized or in the emergency room, only 3% of the group that received the treatment was hospitalized or treated in an emergency room.

“The thing that is scary about COVID is it is very hard for us to identify who is going to do well and who is going to be that person who ends up in the hospital getting intubated,” she said.

Bauch said she believes the treatment is effective.

“I’ve been in health care for 33 years, so I have a good dose of skepticism, and I would say that it really works,” she said.

Bauch, who earlier in her career worked in clinical trials, said she felt comfortable receiving an investigational treatment after looking at the results seen so far.

“It’s a risk-benefit. If I were a low-risk person, maybe I would not have done it under the emergency use. But as a high-risk person, I felt this was worth the risk,” she said.

MUSC Health has set up a trailer at the West Ashley testing site solely for these infusions. This separates the COVID-positive patients from other

patients and allows for designated nurses to focus on the infusions.

The COVID-19 remote monitoring team, which has been checking on patients recovering at home nearly since the beginning of the pandemic, is helping out by going through patient records to find candidates for the treatment.

However, there is a limited supply of the drugs. MUSC Health has so far received 48 doses of bamlanivimab and 24 doses of the Regeneron combination, and has treated 51 patients as of Dec. 16. Currently, the trailer is set up to treat four patients per day. There are plans to expand, Diaz said, to treat up to 18 patients per day. Expansion plans also call for taking referrals from outside health care providers; the treatment is currently limited to people who have their COVID test performed at an MUSC site.

Bauch particularly praised the nurses who stayed with her for the entirety of the treatment.

“The infusion nurses were awesome. I was so proud of them and proud that I work beside them at MUSC,” Bauch said.

OASIS *Continued from Page One*

Her next call was to the Home Depot in Mount Pleasant, which donated artificial turf. Paige Hall, a Roper nurse and wife of Emergency Department doctor Greg Hall, volunteered to make decals to go on the tables. Each table has a different motivational message on it like, “You are changing what’s possible” and “Heroes work here.”

Next Krywko reached out to the MUSC Grounds Department. She asked for a tree to spruce up the space. The grounds crew overdelivered, bringing multiple trees, bushes and even string lights!

Sweat equity also made the outdoor oasis possible. “I totally made my kids and husband help out, which they graciously did.” Krywko said. “My son Nikolai, my daughters Genevieve and Vivienne, my niece Sarah and my husband Chris. They laid down the turf, painted all those tables and set

everything up.”

The final touch was a sign from the Department of Security that reads, “Reserved for emergency department and EMS personnel. Thank you for respecting their dedicated rest space.”

Emergency technician Matthew McGreen said all the effort was worth it. “Sitting out there – out of sight, out of mind for just five or 10 minutes – really helps to decompress and reset, before going back in and spending hours in PPE (personal protective equipment), in an uncomfortable N95 mask trying to do what you can for other people.

“Thank you,” McGreen continued. “It’s been a long road. Knowing that people care for us and want us to be safe, happy and healthy helps us keep going.”

The generosity of the community made it easy to transform a corner of the parking lot into a lush little paradise, Krywko said. “Thank you for supporting front-line workers without hesitation. We appreciate it, so very much.”

SURGE *Continued from Page One*

several in the U.S. South Africa is dealing with a variant that appears to be a speedy spreader, too.

“Those highly contagious variants are clearly out there, probably in a pretty big way. That’s incredibly worrying,” Sweat said.

If they show up in South Carolina – or if they’re already here, undetected – that could make a lot more people sick. And that could contribute to another problem: an overwhelmed health care system.

We’re seeing what that looks like in California. In Los Angeles County, the coronavirus is so widespread that emergency responders are having to limit the use of supplemental oxygen and stop taking people who can’t be resuscitated to hospitals.

So Sweat’s team is keeping a close eye on hospital capacity in South Carolina. The Charleston area still has plenty of hospital beds available, including beds in the intensive care unit. But Sweat is concerned about the Florence and Lancaster areas, which his team also tracks because MUSC Health has hospitals in those areas.

“Florence has a problem,” Sweat said. “The numbers have really gone up in the past week. Lancaster is even worse.”

But both areas still have space – for now.

Sweat encourages everyone to do what they can to slow the virus’ spread. “We’re going to have to be really strict over the next couple of months, I think.”

Wear masks, he said. Minimize contact with people outside of your household. Stay outdoors when you’re around other people as much as possible.

And don’t forget, vaccines are arriving, Sweat said. “We need to be putting all efforts possible on vaccination and really steeling ourselves for being careful. We do have the power to do it. You can minimize your risk.”

City of Charleston Climate Action Plan seeks feedback

The City of Charleston’s Climate Action Plan is being updated and community input is needed.

Complete an online survey or for additional information, visit <https://www.charleston-sc.gov/1972/Sustainability>. Your participation is appreciated.



Photo Provided

Krywko enlisted her family and others to lay down the artificial turf, paint donated picnic tables, string lights and prepare the area for Emergency Department and EMS personnel.

TRANSPLANT *Continued from Page Seven*

all of our patients have had some type of virtual visit now,” he noted.

Telemedicine is somewhat different than a pure virtual visit because telemedicine involves having a trained person, such as a nurse, in the room with the patient to perform a physical exam while the doctor speaks with the patient through a monitor.

In January, the transplant program will begin a rotation of weekly telemedicine

SPINE *Continued from Page Nine*

they get multiple compression fractures – I’m trying to keep her upright basically. And I want to help to prevent further fractures.”

To that end, Johnson also referred her to an endocrinologist to manage her osteoporosis. Shetley said she counts herself as fortunate for her treatment.

“I know I’d just be hunched over with a cane if I didn’t have the kyphoplasty,” she said. “I cannot imagine what my life would be like if I didn’t have Dr. Johnson and that procedure.”

clinics in each of the five regions of the state, with advanced practice providers physically in place in each of the regions, Stanton said.

“I think 2021 is going to be a big year for transplant and telemedicine,” Stanton said.

Stanton also said Zayas has made a big difference.

“Having a provider out in the community has been the next step for our program. He’s been everything we hoped he’d be,” Stanton said.

STRAIN *Continued from Page Two*

we can. We need everybody to play their part.”

It’s possible that the new strains will show up here, brought via flights from the affected countries. “I think we’ve been fortunate here in Charleston and MUSC where we haven’t had this big surge yet compared to other places. But I talk to my friends at other institutions, which are being inundated by COVID cases, and it’s awful. I think we really need to think about that and we need to make sure that we do everything we can to prevent that from happening here for as long as possible.”

We have a winner! — #backthevaxMUSC

Recently we asked the MUSC family to vote for their favorite hashtags for our vaccine advocacy campaign. Of the four options, #backthevaxMUSC emerged as the most popular. The hashtag will be used as all things COVID-19 vaccine related continue to be rolled out. Soon you'll see buttons, stickers and other signage with the hashtags to help to promote awareness. We'll keep sharing the latest information about how many MUSC team members have been vaccinated, answering vaccine-related questions and providing information about vaccine safety, effectiveness and possible side effects. We'll also share personal stories from MUSC family members who have chosen to receive the vaccine. Look for #backthevaxMUSC and visit the MUSC Health vaccine web page (<https://muschealth.org/patients-visitors/coronavirus-information/covid-vaccine>) and the medical center intranet COVID-19 vaccine page (login required) (<https://www.musc.edu/medcenter/covid-19/vaccine/index.html>) for regularly updated vaccine information.



CERVICAL *Continued from Page Six*

community's health profile regarding resources and access to health care. The big push right now is to figure out how we can treat women in the community in which they live. We want to get doctors there to treat them, but we also need to focus on other things in their community that could be missing, such as access to recreational facilities for exercise or to healthy foods, which can be expensive.

Oftentimes, we tell women they should eat healthy, work out, lose weight and get a mammogram, but they may not be able to do some of those things without driving really far. The goal of using geographic information systems is to learn more about these communities so that we can try to improve them.

At Hollings, we're also using geospatial technology to understand areas in the state where there are high rates of cancer and obesity to uncover this link and to identify areas where cervical cancer rates are high and HPV vaccination rates are low, helping us to identify where we should be pushing vaccine education.

Q: What immediate steps can women take to reduce their risk of developing cervical cancer?

Two of the best things women can do to lower their cervical cancer risk are to get vaccinated against HPV and to get their regular Pap smear screenings and HPV testing. It's important to know that the recommended age range for the HPV vaccine has been expanded, so anyone between the ages of 9 and 45 can get vaccinated. Studies have shown that even if you've had some form of HPV infection in the past, you could still benefit from being vaccinated. It's also important for parents to vaccinate their children to prevent them from developing one of six types of cancer in the future, including cancers of the anus, mouth, throat, cervix, vagina and vulva.

Quitting smoking is also an important first step, as tobacco has certain chemicals that can cause damage to cells in the cervix, leading to pre-cancer changes.

Additionally, living a healthy lifestyle with physical activity and a well-balanced diet of fresh fruits and vegetables is always important to decrease the risk of developing certain cancers and to promote a healthy life.

Learn more about cervical cancer and Ross's work. Tune in to the MUSC Health Facebook page on Jan. 22 at 11:30 a.m. EST for a special Facebook live interview with Ross in recognition of Cervical Cancer Awareness Month.

MLK Week @ MUSC

January 16 - January 23, 2021



To Reflect.



To Celebrate.



To Serve.

“Even though we face the difficulties of today and tomorrow I still have a dream.”
- Rev. Dr. Martin Luther King Jr.

REFLECT. LEARN. SERVE. CELEBRATE.
together during MLK Week at MUSC!

Visit MLK Week @ MUSC

[Click here for more information](#)