



Photo by Sarah Pack

A patient talks with Dr. Cristin Adams during a telehealth visit at The Navigation Center as MUSC medical student Juliette Gammel and family medicine resident Dr. Dion Foster listen.

How one physician sought to improve health care access for Charleston's homeless

BY BRYCE DONOVAN

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Two and a half years ago, Debra Grimes lost her vision. A scary prospect for anyone, for sure, but for a homeless woman living on the streets of Charleston, the stakes were even higher. Without the ability to see, Grimes had a difficult time providing for herself. Oftentimes, she wasn't sure where she was, who she was with or, most importantly, if she was even safe.

"I felt lost. I didn't have anybody to help me," she said through tears. "I couldn't see myself in the mirror. I didn't even know what I looked like anymore."

Things kept getting tougher and tougher for her until one night, completely exhausted and lost, she laid

down to rest. A few hours later, she was awakened by a police officer. She had been placed under arrest for sleeping at a bus stop.

Grimes was devastated.

But then something incredible happened: She was connected with The Navigation Center, an organization that advocates for the homeless population of Charleston. Once she was there, staff members fed her, found her housing and coordinated her social security benefits. But they didn't stop there. Next, they connected her with MUSC Health's CARES Clinic, an in-house telehealth-based free clinic. Once there, doctors determined that her sight loss was actually

See HOMELESS on page 2

Speaking up against domestic violence

BY BRYCE DONOVAN

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City of Hanahan Mayor Christie Rainwater remembers sitting in an exam room with a close friend, waiting on the doctor to come in and assess her injuries. In the quiet that preceded the doctor's arrival, Rainwater vividly remembers her friend looking up at her, and through tear-filled eyes, asking, "What do I do now?"

The question hung in the room. After all, the friend's injuries had come at the hands of the person who supposedly loved her the most – her husband. Sadly, Rainwater's friend is not alone. According to the National Coalition Against Domestic Violence, 1 in 3 women and 1 in 4 men have experienced some form of physical violence by an intimate partner. And according to the South Carolina Law Enforcement Division, between 2019 and 2020 (the latest data available), the Palmetto State saw a 5% increase in intimate partner violence. And experts fear that the pandemic – and the isolation faced by many at-risk partners – has only exacerbated those numbers.

October is Domestic Violence Awareness Month, and Rainwater was speaking at an event marking the partnership between MUSC Health and My Sister's House, a nonprofit shelter for victims of domestic violence, serving Berkeley, Charleston and Dorchester counties. She was joined onstage by local politicians, advocates and lawmakers as well as key players representing My Sister's House.

MUSC Health Charleston CEO David Zaas, M.D., underscored the importance of the

See AWARENESS on page 11

3

Catching it early
Newborn screenings find more conditions earlier.

9

Balancing act
Upping certain proteins gives scleroderma patients hope.

4 Meet Tony Gentry, R.N.
5 MUSC aids Puerto Rico
10 Focusing cancer screening

HOMELESS *Continued from Page One*

due to severe cataracts in both eyes. But the best part was it could be fixed. So they referred her to get bilateral cataract surgery.

Marie Elana Roland, the founder of The Navigation Center, made all of her appointments, drove her to and from each surgery and helped her with recovery.

Today, Grimes can see again. “It’s glorious, like heaven. I thank the good Lord I got my sight back,” she said.

Thanks to MUSC Health and The Navigation Center, not only has Grimes regained her vision, but she’s gotten much-needed dental care, learned the city bus system and even started working a part-time job.

“It’s indescribable,” Grimes said through a broad smile. “I am so happy. I thank God for all of them.”

More than 2 million people in the U.S. experience homelessness each year, with over 4,000 of them being right here in South Carolina. Research has shown that the homeless population is three to six times more likely to experience illness, four times more likely to be hospitalized and three to four times more likely to die prematurely.

MUSC Health family physician Cristin Adams, D.O., who runs the CARES Clinic, understands as well as anyone that not having a roof over your head makes a person about as vulnerable as possible.

“As important as health is, it still doesn’t rank when you’re talking about where you’re going to sleep that night or what you’re going to eat,” she said. “So, unfortunately, for many of our unhoused

population, until things get really, really bad, they just don’t get the medical attention they so desperately need.”

According to Adams, the biggest reason for this simply comes down to a lack of access to health care. This is why she pushed so hard to get this clinic up and running. But in the current climate

“As important as health is, it still doesn’t rank when you’re talking about where you’re going to sleep that night or what you’re going to eat. So, unfortunately, for many of our unhoused population, until things get really, really bad, they just don’t get the medical attention they so desperately need.”

Cristin Adams, D.O.

– when the health care community is already spread so thin and overworked – Adams knew a different approach was needed. So she and her team got the idea to provide a telehealth aspect to the clinic. Thanks to her new idea, medical students, and sometimes residents, would always be on site, and through modern technology, a patient would also have access to specialists so they could get the targeted help they need.

Thanks to their innovative solution, Adams and her staff were recently given a \$15,000 Association of American Medical College’s Telehealth Equity Catalyst (TEC) award. Not only do they have plans to expand the care they provide as well as associated medical education initiatives with this funding,

but it’s what the money signifies that means the most to the MUSC Health crew.

“I think it shows that what we’re doing matters,” Adams said.

Second-year College of Medicine student Juliette Gammel, who volunteers at the clinic whenever she has the opportunity, thinks telehealth is the

future of medicine.

“I really think it’s the wave of the future,” she said. “So to be able to get to work with the technology while helping such a deserving population, it’s just an awesome, gratifying experience.”

Gammel, who wants to be a trauma surgeon one day, sees a parallel between those without a home and those involved in accidents.

“Neither one of them chose to be in that situation,” she said. “So, as a physician, to be there for them in their time of need, it’s why we go into medicine in the first place.”

Working with the homeless population does provide unique challenges, Gammel said. For instance, things a physician might take for granted, like access to charts and scans or a patient’s medical history, oftentimes just aren’t available.

“A lot of times, you’re only playing with half the deck,” she said. “So in that regard, it’s more challenging. But even with those hurdles, there’s something about this particular patient population where you just know you’re making a huge difference in their lives. What’s not to like about that?”

The MUSC Health telehealth clinic operates every Tuesday and Wednesday at The Navigation Center, which is temporarily located on Calhoun Street, while a new location is being built.

Adams, who has been working with the homeless population in Charleston since 2013, hopes that the clinic will continue to grow and eventually reach more and more people.

“The cause is just so amazing,” she said. “This is a group of patients who need someone looking out for them, and I’m proud that in our own small way, we’re able to provide that for them.”

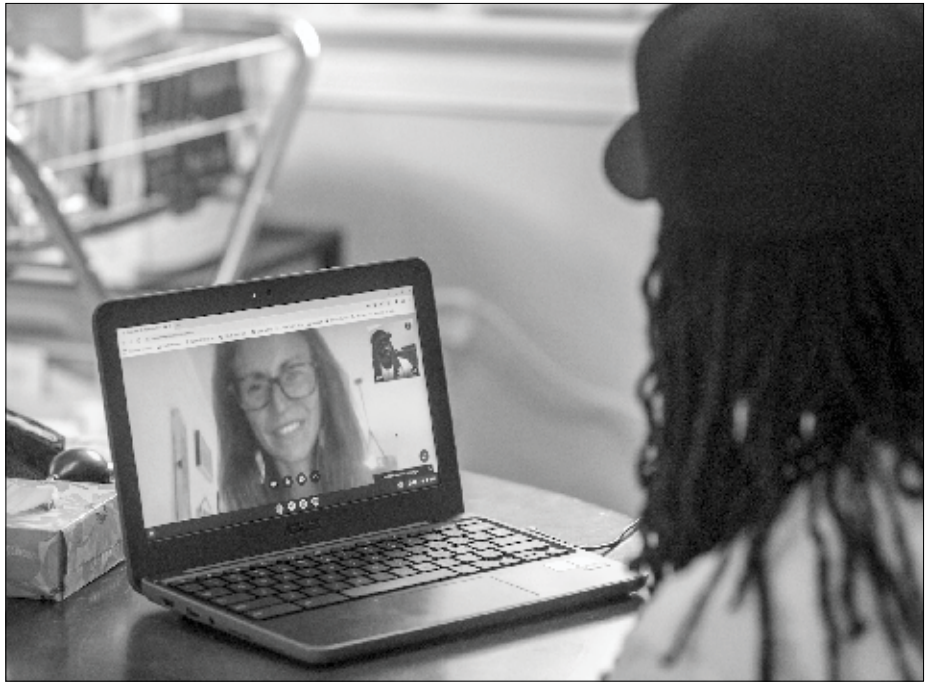


Photo by Sarah Pack

Family physician Dr. Cristin Adams speaks with a patient who came in to be seen at MUSC Health’s telehealth clinic for the homeless.

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From panic over results of newborn screening to gratitude for early diagnosis

By HELEN ADAMS

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Brittany Morris was thrilled to welcome her second child into the world. In her eyes, James was perfect.

But newborn screening, which tests for certain disorders that aren't obvious at birth, would soon give her and her doctors important information that would help give him a healthier future. The screening involved drawing blood from the baby's heel and sending it to the South Carolina Department of Health and Environmental Control's Public Health Lab, then letting the parents know about the results.

"Something came back abnormal. So they told us to do the newborn screen again at the doctor's office. And we did it again, and it came back abnormal a second time. That's when they told me he has Pompe disease," Morris said.

Morris had never heard of it. Her reaction? "Panic, I guess, immediately. Yeah, because they tell you not to Google what Pompe disease is because the information is outdated."

Pompe disease is rare, affecting an estimated 1 in every 40,000 births. It's hereditary and can be fatal, depending on its severity and progression. It's important to catch it early, like James' doctors did.

The disease is caused by an abnormality in a gene called GAA, which leads to an inability for the alpha-glucosidase enzyme to break down a complex sugar, called glycogen, in the body. As glycogen builds up, primarily in the heart and muscles, it causes damage to the way muscles work.

Pompe disease was added to the conditions South Carolina screens babies for in February of 2021. James was born three months later. Without that crucial test, Morris wouldn't have known he needed treatment ASAP.

"I probably would've noticed delayed

motor skills, but then that still would have left doctors saying, 'You know, every baby's different.' Or, 'Some babies do things later and maybe it's not anything.' And I don't know that any doctor would've automatically thought, 'Oh, it's Pompe disease.' There's some doctors that never knew that existed."

Morris is sharing James' story during Newborn Screening Awareness Month, a time that highlights the importance of catching harmful conditions early so they can be treated without delay to get the best outcome possible for the child.

For James, that meant seeing the only doctor in South Carolina who is currently treating Pompe disease in babies: Neena Champaigne, M.D., chief of the MUSC Genetics and Genomics Integrated Centers of Clinical Excellence.

"James actually has what we call late-onset Pompe disease because he didn't develop cardiac symptoms. In the classic infantile-onset, these babies usually present at about 4 or 5 months with cardiac failure and significant muscle weakness, and without treatment, these babies used to die in the first or second year of life," Champaigne said.

"Catching it early, we're able to put them on enzyme replacement therapy, giving them back the enzyme that their body isn't able to produce. And it removes the storage material, which is glycogen, from the muscles and the heart."

James' mother drives them from Johnsonville, which is near Florence, to North Charleston every other week so he can get that therapy at the MUSC Children's Health R. Keith Summey Medical Pavilion. The drive takes about two hours each way, and the therapy, which involves enzyme infusion, takes four hours. The Morrises are in the process of getting their home set up so they can do the enzyme therapy there.

James also sees a team of specialists



Photos by Sarah Pack

Fifteen-month-old James Morris rests on his mother as he gets an enzyme infusion to help his body combat a rare condition called Pompe disease.



A wider view shows James' mother, Brittany Morris, as nurse Kimbley Dumphy connects the little boy to the machine that will supply enzymes.

at MUSC Children's Health. He has genetic counselors, a metabolic dietitian, a neurologist, a cardiologist, and he's about to start seeing an audiologist.

"I would say it's taken a year to get into the swing of things. I feel like it has gotten easier now," his mom said.

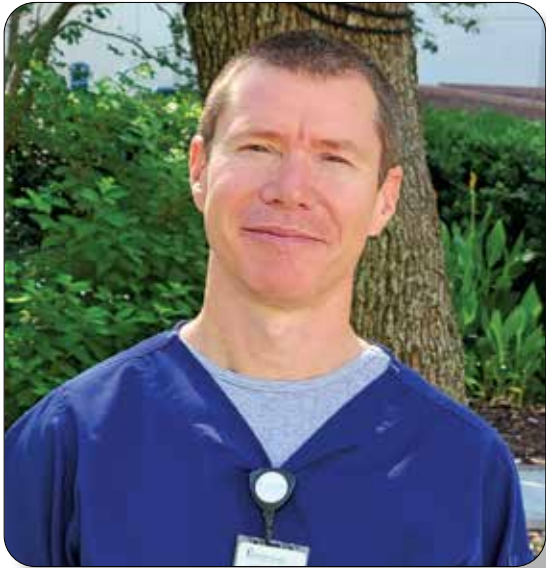
James will have to be closely monitored and keep getting the enzyme treatment for the foreseeable future, Champaigne said. "But because treatment is so new, we don't know what the landscape is going to be for the future because we've altered the typical course of this condition."

James' mother hopes the course of

James' disease, picked up by newborn screening, will allow him to have a full life. "My hope is that one day maybe there'll be a cure and he can live his life without having infusions every other week so that he can be just like every other person. I think other than that, other than infusions, he'll just take longer to do things like walking. But I think he'll have a life, even if they don't cure it."

The SCDHEC Newborn Screening Program currently tests for 53 disorders. Beginning the week of Sept. 26, spinal muscular atrophy screening will be added to the panel. There are plans to add three more conditions in 2023.

MEET TONY



Tony Gentry, R.N.

Department; Years at MUSC

MUSC Health-Charleston Division, Inpatient Wound and Ostomy Care; Eight years

How are you changing what’s possible at MUSC

Every day I strive to emulate my teammates who exemplify the epitome of “changing what’s possible” with their top-quality patient-centered care and evidence-based practice.

What music is in your player now

Prince’s “Greatest Hits,” “Best of Dancehall,” featuring Shabba Ranks and comedy podcasts

A unique talent you have

Highly observant of meaningless facts and happenings

Favorite place in the world

Toss up between Tumon, Guam, and Yokaichiba, Japan

Greatest moment in your life

Hearing my kids say “I love you, daddy”

Words of advice

*“Even monkeys fall from trees.”
— Japanese Proverb*

SUSAN ROSENBLATT LECTURESHIP



Jonathan Samet, M.D., MS
Dean and Professor
Colorado School of Public Health

***The Global Tobacco Pandemic:
How did we bend the curve?***

Dr. Jonathan Samet has been an editor of several U.S. Surgeon General’s reports on smoking and health. He is a FAMRI Distinguished Professor and serves as Dean of the Colorado School of Public Health. Dr. Samet is a fitting choice to give the inaugural lectureship to honor the contributions of Susan Rosenblatt to the field of cancer prevention and control.

Susan Rosenblatt, with her husband and law partner, Stanley Rosenblatt, took on Big Tobacco in two blockbuster Florida cases in the mid-1990s. The first case involved flight attendants who sued cigarette companies because of the harms caused by secondhand tobacco smoke in their work environment. After four months of trial, the tobacco companies settled for \$300,000,000. This enabled Susan and Stanley to create the Flight Attendant Medical Research Institute — FAMRI — with the funds being used for research and to search for cures of the diseases caused by exposure to secondhand tobacco smoke. The second case was brought on behalf of injured smokers in the state of Florida. The flight attendant case helped end smoking on airlines while the case on behalf of Florida residents injured by smoking resulted in a \$144.8 billion jury award, the highest verdict in American history.

Dr. Samet is a pulmonary physician and one of the world’s leading experts on the adverse health impact of air pollutants. Dr. Samet served as an expert witness in both cases filed by the Rosenblatts and will discuss how Susan and Stanley Rosenblatt helped accelerate the decline of cigarette consumption both domestically and globally and ultimately diminished the power of the cigarette industry.



Stanley and Susan Rosenblatt

Thursday, October 20, 2022
12 p.m. – 1 p.m.

Hollings Cancer Center Room 120
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MUSC to help with psychological first aid in Puerto Rico

By HELEN ADAMS

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On Sept. 26, psychologists from MUSC held a training session at a university in Puerto Rico via Zoom. They coached participants on how to offer psychological first aid in the aftermath of Hurricane Fiona on an island still recovering from the devastation of Hurricane Maria's 2017 strike.

Rosaura Orengo-Aguayo, Ph.D., an associate professor in MUSC's Department of Psychiatry and Behavioral Sciences, grew up in Puerto Rico and led the training session. She knows firsthand what it's like to recover from a big storm

continuation of MUSC's involvement with Puerto Rico, a connection that began after Maria. In 2017, a friend in Puerto Rico told Orengo-Aguayo the education secretary was looking for people who could come up with a comprehensive plan to help teachers and students to deal with Maria's aftermath. Schools were closed, utilities were out and loved ones were leaving.

For Orengo-Aguayo, it was a no-brainer. "I think as professionals, we sometimes leave the personal out of the professional life. But in our team, we're the opposite. I'm Puerto Rican, so that will forever be my home."

She and her colleagues used a grant

"I think as professionals, we sometimes leave the personal out of the professional life. But in our team, we're the opposite. I'm Puerto Rican, so that will forever be my home."

Rosaura Orengo-Aguayo, Ph.D.

in the U.S. territory, which gets walloped every seven or eight years. She's also getting reports about Fiona's impact from family members on the island.

"My mom and my sister and my brother are all fine, physically. Their homes are intact. None of them have power, and water just returned today. But everyone there knows a direct family member or friend who had flooding damage or losses."

Some of those people are still scarred by the effects of Hurricane Maria, the most catastrophic storm to hit Puerto Rico in decades. It led to around 3,000 deaths by some estimates and took out a lot of the island's infrastructure, including the electrical system.

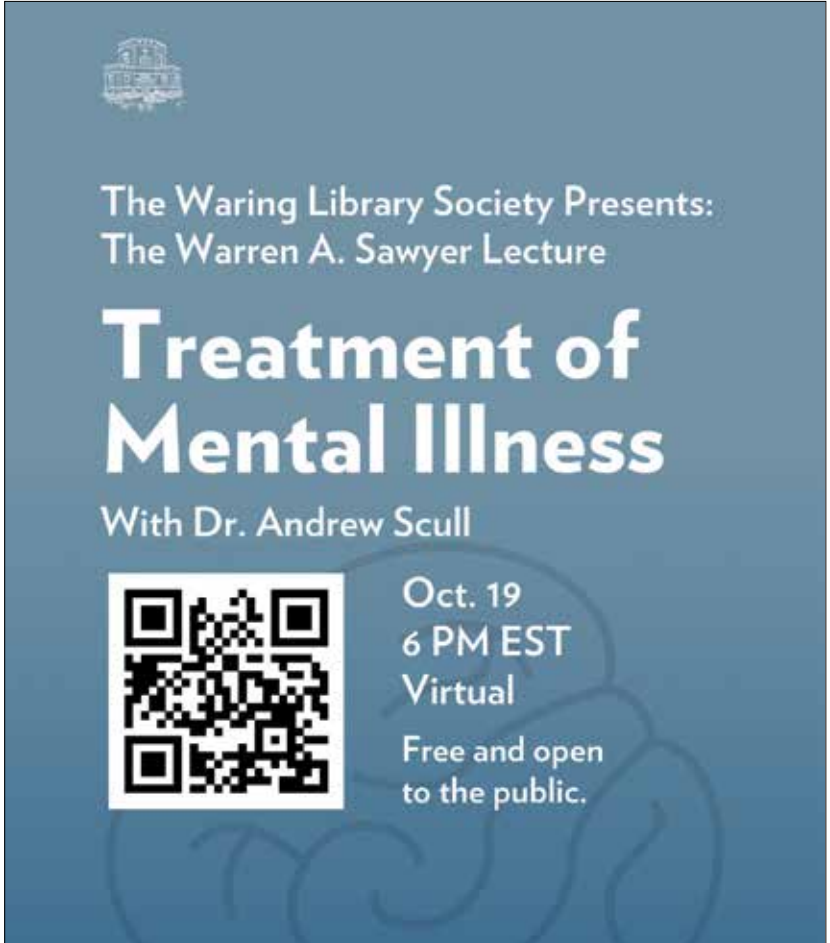
Her training session was a

they already had from the Substance Abuse and Mental Health Services Administration to train Puerto Rican teachers in how to take care of their own mental health while also caring for the kids who weathered the storm.

Since that team's first visit in October of 2017, the MUSC psychologists have been back multiple times to continue their work. "In the last four years, we trained Puerto Rican providers to do trauma-focused cognitive behavioral therapy," Orengo-Aguayo said.

They also conducted one of the largest post-disaster screening projects in U.S. history. It found most of the so-called "Maria generation" kids saw houses


See **FIRST AID** on page 7



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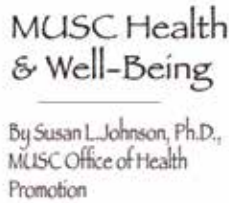


CharlestonHome.com

Fall into outdoor fitness

Humans are naturally drawn to green space and water: Beaches, lakes, parks, trails, mountains and forests are perpetually popular recreation venues. For many people, nature’s tranquility offers a much-needed respite from everyday demands and stressors. Encouraging green exercise leverages the innate appeal of natural surroundings to make physical activity an enjoyable daily habit. Lucky for us, South Carolina’s Lowcountry boasts postcard-perfect scenery comprises salt marshes, maritime forests, beach dunes – the perfect setting to promote green exercise.

Green exercise, which is any physical activity that takes place outside, combines the mental and physical benefits of being active with the psychological and physical rewards of



exposure to natural environments – a synergy that adds up to healthier, happier people who are more likely to stay fit.

The use of outdoor natural environments for physical activity and health is not new. For most of human history, we have lived off of the land and sought nature for basic survival needs and health. However, in modern society, the average American suffers from nature deficit disorder, spending an estimated 93% of their time either indoors or in an enclosed vehicle. Negative effects can include diminished use of the senses, attention difficulties, higher rates of physical and emotional illnesses, child and adult obesity, vitamin D deficiency and many other. The good news is that just five minutes of activity in nature improves self-esteem and mood



as well as focus and creativity. Studies show that reinforcement for green exercise is built in – because most people truly enjoy spending time in natural settings, they’re more likely to stick with a fitness plan that includes green activities.

Five reasons to exercise outside

1. It improves your mood. There’s just something about the outdoors that makes us feel better. Research shows that exercising outside can help to reduce stress and depression and improve your mood. Bonus – exercising near the water has even greater effects!
2. You get more vitamin D. Vitamin D is needed for strong bones, muscles and overall health. Being physically active outside increases sun exposure, which is the best natural source of vitamin D. So, go on – enjoy the sunshine, just remember the sunscreen.
3. You’ll sleep better – spending too much time inside away from natural light and with increased exposure to artificial light can alter our circadian rhythms, thus disrupting our sleep patterns.

4. It boosts your self-esteem. Research shows that time spent outdoors can improve self-esteem. The results were more pronounced for those living with mental illness.
5. It can increase motivation. Studies reveal that those who incorporate outdoor exercise into their fitness regimens have better adherence to their exercise programs. Compared with indoor walking, outdoor walking creates larger improvements in mood, revitalization, positive engagement, enjoyment and intent to exercise in the future.

Four easy ways to make an outdoor workout happen

- Exercising outdoors doesn’t mean you have to commit to running a marathon. Here are some easy ways to incorporate an outdoor workout into your exercise routine.
1. Take a walk on your lunch break. Rather than eating your lunch at your desk or in a staff room, take a stroll outside. The fresh air and movement

See **FITNESS** on page 7



Marshall is the best real estate agent we have ever worked with. Period. This is great when you need to sell or buy a home in Charleston. This is not great when you move somewhere else. We still call Marshall to ask real estate questions and he is remarkably insightful, resourceful and funny.

- Dr. Amanda Parks, MD



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INSPECTIONS

FITNESS *Continued from Page Six*

will leave you with more energy for the afternoon.

2. Try out your green thumb. Getting out in a garden is a great way to be active and spend some time outdoors. Don't have a yard? Just stroll over to the Urban Farm and volunteer; there's always something that needs to be planted, weeded or harvested, and you'll get to take home the fruits of your labor.

3. Move more outdoors. Many of us spend hours sitting at a desk all day, followed by hours sitting in a car getting to and from work. To sneak in a bit more activity outdoors, walk or cycle to work or jump on a Lime bike and ride during your lunch break. Or, just try parking a bit farther away from your destination. Every little bit counts.

4. Incorporate the outdoors into existing indoor workouts for cross-training benefits. For example, trail-running and hiking are more difficult than exercising on a treadmill. Mountain biking requires far more balance and

coordination than a stationary or recumbent bike. Additional upper-body strength is also required for control and quick movements.

To promote green exercise, MUSC's Office of Health Promotion and the South Carolina Healthy Business Challenge have teamed up with the City of Charleston's Parks and Recreation Department to offer the Adventure Out Yoga Series, a year-long outdoor fitness campaign to encourage residents to visit city parks for exercise. Join MUSC Wellness Center's yoga instructor Gail Corvette at 9 a.m. on Oct. 15 at the Gazebo in Hampton Park for a free yoga class and enjoy all the benefits of exercising in nature this fall.

"In every walk with nature one receives far more than he seeks."

— John Muir

FIRST AID *Continued from Page Five*

damaged on an island roughly the size of Connecticut, about half had damage to their own home, almost 58% had a friend or family member leave Puerto Rico, about a third had to deal with a lack of food or water and more than 15% still didn't have electricity several months after the September 2017 storm.

Clearly, Maria was life-altering for the island and its people. The MUSC team knew its work needed to continue. So Orengo-Aguayo and her colleagues recently got five more years of SAMSHA funding for their work in Puerto Rico.

She and another bilingual MUSC psychologist, Regan Stewart, Ph.D., had already scheduled another trip to Puerto Rico before Fiona. "October 13th through the 25th, this trip was very much to meet with our partners in Puerto Rico. We're going to have a team retreat to discuss our goals and next steps," she said.

"We also have four days going to a small island off the coast of Puerto Rico. That's a municipality called Culebra. And this island does not have a single

mental health professional. So we're partnering with grassroots organizations to start the first ever telehealth program there so kids can get access to psychologists in the mainland, in Puerto Rico, in the island. So that's part of our trip as well."

They'll also meet with experts at the largest community mental health center in Puerto Rico to follow up on needs and next steps. But Orengo-Aguayo said their work probably won't stop there.

"I suspect we'll be doing some relief work as well. It'll likely involve meeting with leaders and stakeholders of agencies to assess, 'How do we support our staff? How do we support our students going back to school?'"

Familiar questions for a woman working to help the island she loves develop the mental health services it needs. "My mission still as a clinical psychologist is that future clinical psychologists don't need to leave the island to get the best training, the best care. So for me, until my career's over, it will be about capacity building so that Puerto Ricans stay in Puerto Rico."



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Screening mammograms now added at West Ashley site

By LESLIE CANTU

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To make breast cancer screening even more accessible to local communities, MUSC Hollings Cancer Center and MUSC Health are now offering screening mammograms in West Ashley.

MUSC Health West Ashley Medical Pavilion – located within the Citadel Mall – began offering screening mammograms in February. Teresa Harrison, radiology operations manager for mammography, said the new location seems to be a well-kept secret, but the team is eager to get the word out, especially so that women in West Ashley, James Island and Johns Island know that they can get their annual mammograms closer to home.

Radiologist Rebecca Leddy, M.D., said it's all part of Hollings' mission to reduce

the cancer burden in South Carolina.

"Our mission is to be in the community where the patients work and live and to offer them services and a convenient high-quality care situation – so we're bringing our high-quality services beyond just the downtown cancer center location," she said.

Hollings also offers screening mammograms in Mount Pleasant at the MUSC Health East Cooper Medical Pavilion and North Charleston at the MUSC Health North Area Medical Pavilion. Between the four locations, it is easy to get an appointment quickly, Leddy said.

Yearly screening mammograms are

See **SCREENING** on page 11



Photo by Dawn Brazell

Radiology technologist LaPrea Champion-Patterson stands ready to assist women in getting their annual screening mammograms.

Who should get screening mammograms?

- ❑ Women at average risk should begin yearly screening mammograms at age 40.
- ❑ Women at higher risk of breast cancer may benefit from a consult with the High-Risk Breast Evaluation Program.

Risk factors include:

- ❑ Personal history of breast and ovarian cancer.
- ❑ Family history of cancer: breast (especially males and those over 40 years of age) and/or other specific cancers (ovarian, skin, prostate, colon, thyroid, pancreas).
- ❑ Atypical hyperplasia or LCIS on previous breast biopsy.

- ❑ Inherited genetic mutations: People who carry certain gene variants (e.g., BRCA1, BRCA2) are at a higher risk for developing breast cancer.
- ❑ Obesity.
- ❑ Alcohol consumption: drinking more than one to two drinks a day.
- ❑ Radiation: especially during younger years.
- ❑ High breast density on mammogram.
- ❑ Ashkenazi Jewish ancestry.
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 - Early menstruation – before age 12.
 - Late menopause – after age 55.
 - Never pregnant.
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"These workshops are helpful for families who have lost a loved one and are going through the Probate process," said Judge Condon. "They're also helpful for anyone interested in Probate or estate planning and are very educational for new residents. I am honored to demonstrate our electronic easy filing system for citizens and attorneys, the first and only program in a South Carolina Probate Court. We are accessible 24/7 anywhere in the world, except North Korea (no internet allowed there)."



Judge Irv Condon

Balancing act: Reversing lung fibrosis in scleroderma requires increased antifibrotic proteins

By LILY NEFF

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Much of the research on scleroderma, a connective tissue disease that causes scarring, or fibrosis, has focused on the increased number of proteins promoting fibrosis in these patients. An MUSC research team took a different tact and measured the levels of an antifibrotic protein, Cathepsin L, in these patients. They report in *Rheumatology* that patients with scleroderma had reduced levels of this antifibrotic protein, and the Cathepsin L that they did have was packaged in an inactive state that that deprived it of its antifibrotic function. The team was led by Carol Feghali-Bostwick, Ph.D., the Kitty Trask Holt Endowed Chair for Scleroderma Research, and M.D.-Ph.D. student Joe Mouawad, a National Scleroderma Foundation predoctoral fellowship awardee.

“I think the most important thing here is that it’s a new angle from which we tackled fibrosis,” said Mouawad. “A lot of the research out there focuses on what is driving fibrosis to happen. What we show here is what is missing that could have prevented fibrosis.”

To understand fibrosis more fully, think of it as a seesaw. One side has profibrotic proteins, which promote fibrosis, and the other side has antifibrotic proteins, which help to reverse it. When the seesaw is balanced, fibrosis does not occur. However, in patients with scleroderma, more profibrotic proteins are added to one side of the seesaw, shifting the balance in favor of fibrosis. This new finding shows that not having enough antifibrotic proteins on the other side of the seesaw also contributes to fibrosis.

Fibrosis occurs when excess collagen accumulates in the space surrounding the cells. In patients with scleroderma, fibrosis occurs in the skin and internal organs, leading to impaired organ

function and eventual organ failure, leaving them with few treatment options other than transplant. The leading cause of death in patients with scleroderma is lung fibrosis, according to Mouawad – approximately 40% of those patients will not survive past 10 years. The Food and Drug Administration has approved new drugs for lung fibrosis in these patients. However, these drugs only slow the progress of fibrosis instead of stopping or reversing it.

“They buy patients extra time, but they’re not a cure. That’s why research into new treatment options is urgently needed,” said Feghali-Bostwick.

Earlier work by Feghali-Bostwick identified a potent antifibrotic protein, endostatin, that is naturally produced by the body in response to fibrosis. When her team looked at fluid from the lungs of scleroderma patients, endostatin was not at a level to help to reduce lung fibrosis.

“For some reason, the levels of endostatin do not reach therapeutic levels,” Mouawad said. He wanted to know why.

He decided to examine the role of Cathepsin L because it is known to be necessary for the release of endostatin. He and Feghali-Bostwick isolated cell samples from the lungs of patients with scleroderma. They also studied tissue samples in culture because that more realistically mimics the physiological conditions of the living human lung.

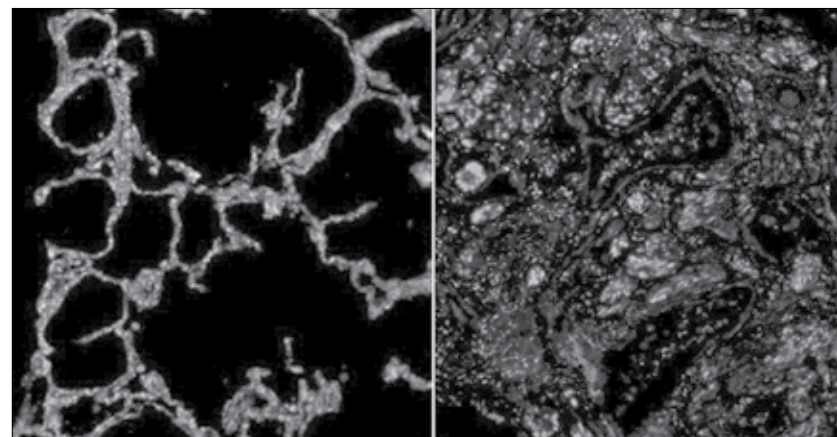
Through these studies, they found that the lungs of patients with scleroderma have less Cathepsin L than healthy lungs. They noticed that Cathepsin L was also reduced in fibroblasts, the cells responsible for fibrosis. Finally, Cathepsin L was packaged in an inactive form, preventing it from being activated so it could improve fibrosis.

Their findings are important for two main reasons. First, the antifibrotic protein Cathepsin L is reduced in the lungs of patients with scleroderma.



Photo by Sarah Pack

Dr. Carol Feghali-Bostwick and MUSC medical scientist in training program student Joe Mouawad.



Provided by Joe Mouawad

Immunofluorescence images showing healthy (left) and scleroderma (right) lung. The scleroderma lung shows reduced levels of Cathepsin L and increased levels of fibroblast activation marker.

Second, Cathepsin L plays an important role in releasing endostatin, another antifibrotic protein, to reduce fibrosis. Restoring Cathepsin L levels and function could have a therapeutic benefit for patients. But first more research is needed.

“We need to learn how to restore the expression of Cathepsin L and increase its activity in these patients,” said Mouawad. “If you tip the balance toward accumulation of fibrotic proteins, then you’re going to have fibrosis. If we can find ways to tip it back by increasing the antifibrotic proteins, then we could get healing and resolution.”

Feghali-Bostwick agrees that reducing the mortality rate of patients with scleroderma and healing their lung fibrosis will require shifting the seesaw in favor of more antifibrotic proteins, such as Cathepsin L and endostatin, with fewer profibrotic proteins.

“The body has its healing processes. Trying to increase endostatin levels because it’s antifibrotic is one of the body’s ways to heal the fibrosis,” Feghali-Bostwick said. “But for some reason, the response is insufficient or blunted. We need to find ways to somehow boost these internal natural healing processes.”

New cancer control co-leader brings cancer screening focus

BY LESLIE CANTU

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His office walls are still bare, but Ashish Deshmukh, Ph.D., is already finding points of collaboration and synergy across the MUSC campus.

Deshmukh joined MUSC in August as the co-leader of the Cancer Control program at MUSC Hollings Cancer Center and as an associate professor in the Department of Public Health Sciences. He was drawn to the Cancer Control program because of the enthusiasm and collaborative spirit of its members, he said.

Cancer Control is focused on research to reduce cancer deaths by identifying risk factors, developing evidence-based interventions and working with stakeholders and policymakers throughout the state and nation to help to develop public policy and inform practice.

In the past, both program co-leaders were drawn from the field of smoking cessation and tobacco research. Now, Deshmukh, who in addition to cancer epidemiology and decision science focuses on human papillomavirus and the six cancers it can cause, joins co-leader Matthew Carpenter, Ph.D., who focuses on tobacco control and behavioral medicine.

Carpenter said Deshmukh's skillset nicely complements and strengthens the existing program.

"Cancer control does span a wide continuum. It includes many things, not just tobacco control, which is very relevant to South Carolina, but also cancer screening, which is one of the most important things we can do for cancer control," Carpenter said. "I think these are two areas that have particular relevance to South Carolina, where cancer disparities still exist, particularly in the outlying areas of our state."

Deshmukh said he's excited about getting started with the team.

"The way I would describe my research is that it involves bringing together different disciplines – so I work with epidemiologists, decision scientists, health services researchers and stakeholders

across the nation and from different world settings," he said. "I'm very excited and keen to work across disciplines within Cancer Control and beyond, as part of MUSC, to improve cancer prevention and control in the state of South Carolina."

Deshmukh comes to Hollings from the University of Texas Health Science Center at Houston, and he said that South Carolina appears to share many of the public health challenges that Texas faces, including barriers to care driven by social determinants of health and growing inequalities.

As an example, South Carolina has had one of the highest increases in anal cancer mortality and has a high concentration of persons living with HIV, he said, yet the state has only a handful of providers trained in anal cancer screenings.

Anal cancer is one of the cancers that can be caused by an HPV infection. In his research, Deshmukh studies vulnerable and minority groups, including people living with HIV and men who have sex with men, who are at higher risk of developing anal cancer; helps to generate evidence-based interventions to prevent HPV infection and intervene in the progression to cancer, such as HPV vaccination and optimal screening approaches; and studies barriers to implementing evidence-based interventions and strategies to overcome them.

Though anal cancer is considered rare, incidence rates and death rates are both increasing. Deshmukh is particularly interested in reaching high-risk groups. Men who have sex with men living with HIV, for example, have an over 80-fold risk of developing anal cancer than heterosexual men without HIV. Women who have had cervical or vaginal cancer are also at increased risk, Deshmukh said.

Knowing that these groups are at risk, the question becomes how to reach them and what screening methods should be considered. Deshmukh, who is part of a team working on screening guidelines, also looks at whether there are better screening methods that could be more effective and less costly. The current screening method involves cytology,



Photo by Clif Rhodes

Dr. Ashish Deshmukh joined MUSC Hollings Cancer Center and the Department of Public Health Sciences in August.

"It's more about developing screening infrastructure and capacity."

Ashish Deshmukh, Ph.D.

or taking a swab of cell samples, and anoscopy, which uses a tube for viewing of the anus. However, there are few providers trained to provide this screening, and there's a fairly steep learning curve to become proficient, Deshmukh said.

"It's more about developing screening infrastructure and capacity," he explained.

Even once the screening guidelines are in place, which could happen soon, high-risk populations won't be able to follow the guidelines if there aren't a sufficient number of trained providers in place, he said. And if some regions have the capacity to offer screenings and other regions don't, then disparities in catching and treating the cancer will start to build.

Deshmukh also studies cervical cancer with colleagues at the University of Puerto Rico Cancer Center. In most of the U.S., cervical cancer rates steadily decreased for decades and then leveled off around 2012. In Puerto Rico, however, cervical cancer rates have been increasing by 3% per year.

Deshmukh is studying the barriers to screening in Puerto Rico.

"Hurricanes and COVID-19 have disproportionately impacted cervical cancer screening uptake in Puerto Rico, and the recovery has been slow, so the uptake rate has not recovered," he said. Even as Puerto Rico continues to recover from 2017's devastating Category 4 Hurricane Maria, the island was again without power and experiencing catastrophic flooding after Hurricane Fiona made landfall on Sept. 18.

"So, the barriers to cancer care and cancer prevention are more acute, and we still don't have a very good understanding of what might be driving higher incidence of certain cancers or why the disparities exist."

Carpenter said Deshmukh's research interests, his background in health economics and his strong focus on mentoring young researchers make him a strong addition to Hollings and MUSC.

"I'm delighted to have Ashish join our group. He brings great energy, great ideas, great passion and an excellent track record for cancer prevention research," Carpenter said. "He really brings a complementary focus to our Cancer Control program in ways that balance out the strengths that are already in place."

SCREENING *Continued from Page Eight*

critical because they can help to catch cancer in an early stage, when it is more treatable. The West Ashley site includes the latest in 3D tomosynthesis mammography to allow for better detection.

Additional services are in the works. Plans are underway to add diagnostic mammography, breast ultrasound, breast procedures and breast MRI at the West Ashley site next year and for breast surgeons to offer appointments there. Breast MRI is also expected to be available at the East Cooper location by the end of this year.

Harrison and Leddy are both enthusiastic about the West Ashley site. Leddy said she saw the benefits of the location for herself when she brought a family member to an appointment there.

"I was like, 'Oh my gosh, this space is amazing!' You can park right out front with easy access to your appointment. I went to Target and got our prescription, got a Starbucks, and I said, 'This is where we need to be for breast imaging. Our patients will love it,'" she said.

"The parking alone sold me," she added.

The West Ashley location gives people more options to choose where they would like to go for high-quality screening.

AWARENESS *Continued from Page One*

partnership between local health care providers and programs like My Sister's House.

"At MUSC Health, it's our mission, vision and values to truly improve the health of everyone in South Carolina. And that's not only by providing outstanding clinical care but also through working with our community partners like My Sister's House," he said.

That partnership, Zaas said, along with various programs within MUSC Health, such as its Turning the Tide Violence Intervention Program (TTVIP) and MUSC Advocacy Program (MAP), are just the beginning of what's necessary to slow and lower, hopefully, the number of domestic violence incidences.

Natalie Caula Hauff, chair of My Sister's House board of directors, echoed Zaas' sentiments, while explaining that her organization also goes beyond tending to victims' basic needs.

"We are more than just shelter," she said. "And while that is fundamental to what we do, we also provide things like counseling and therapy and court advocacy. We're able to provide services like this, thanks to partners like MUSC."

"Imagine the person you trust the most became violent," said Tosha Connors, CEO of My Sister's House. "They go from your most trusted partner to someone you fear. This is a very real scenario and one that we hear hundreds of times a year. That's why this

month is so critical. MSH, MUSC are standing up to ask to the community to speak up against domestic violence."

Together, MUSC, My Sister's House, and the City of Charleston, which also has adopted October as Domestic Violence Awareness Month, are hoping to make a positive impact and shine a light on a dark corner of our society.

In 1989, Congress passed Public Law 101-112 designating October as National Domestic Violence Awareness Month. MUSC seeks to support survivors, remember victims and raise awareness about domestic violence and intimate partner violence throughout the year but also specifically in October with events and educational programs.

For a list of all of MUSC's sponsored activities, visit the University's Department of Diversity and Inclusion page.

In addition to TTVIP and MAP, MUSC offers resources for victims of domestic violence, including a Sexual Assault Services program and the National Crime Victims Research and Treatment Center.

You can reach the crisis line at My Sister's House by calling 843-744-3242 or the National Domestic Violence Hotline at 1-800-799-7233.

"If we are vigilant," Rainwater said, "We can truly make a difference in the lives of people who have experienced domestic violence, not to mention prevent things like this from even happening."



Find the words hidden vertically, horizontally, diagonally, and backwards.

BAKING TREATS

BAKING	ICING	SIFTED
BROWN	INGREDIENTS	STIR
BUTTER	LEAVENER	SUGAR
CAKE	MIXER	SWEET
CONFECTION	OIL	TASTE
COOKIES	OVEN	TEMPERATURE
DESSERT	RISE	TEST
EGGS	SHEET	WHIP

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