



Photo by Sarah Pack

Audiologist Meredith Duffy, right, shows patient Lindy Brennan her new hearing aid in 2021.

OTC hearing aids coming. Here's what an audiologist want you to tune into

By HELEN ADAMS

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As retailers from Best Buy to Walgreens prepare to sell over-the-counter hearing aids when they become available next month, an MUSC Health audiologist has some advice for people considering buying them.

First of all, they aren't for everyone with hearing loss, said Meredith Duffy, AuD.

"These devices are really only recommended for people with a perceived mild to moderate hearing loss. If there are other symptoms or issues like ringing in the ears, a history of

ear infections, drainage, pain in the ears, ear deformities, vertigo or dizziness or a sense that one ear is better or worse than the other, these are all reasons to see both an ear, nose and throat doctor and an audiologist before pursuing the OTC hearing aids. They would probably need to be fit with the more traditional prescriptive hearing aids."

Duffy said they're also not recommended for people under the age of 18. "It is very important for children and teens with hearing loss to be fit correctly with hearing aids by a pediatric audiologist. The customized programming

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Omicron-specific booster should be available soon

By BRYCE DONOVAN

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The Food and Drug Administration authorized an Omicron-specific booster, marking the first redesign of coronavirus vaccines since they were rolled out nearly two years ago. The Omicron variant has been the dominant strain since early this year, with the BA.4 and BA.5 subvariants being especially transmissible.

The Centers for Disease Control and Prevention has signed off on it.

"Once it's given the OK, we'll put in an order, and it should ship pretty quickly. The entire process should take about a week, meaning we should have it available to anyone who wants it the week of Sept. 12, maybe sooner," said Danielle Scheurer, M.D., MUSC Health System chief quality officer.

The new booster comes at a point in the pandemic when approximately 90,000 infections and 475 deaths are being recorded daily in this country. Though hospitalizations have become much rarer, COVID-19 is still the third leading cause of death in the United States.

Though this targeted booster should help to slow the spread of the virus, Scheurer is skeptical that it will fly off the shelves.

"My guess is the uptake will be low. So many people have gotten COVID at this

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Forbes names MUSC Health one of state's best employers

BY HELEN ADAMS

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The business publication Forbes has named MUSC Health one of the best employers in South Carolina. David Zaas, M.D., CEO of MUSC Health-Charleston Division, called it an honor.

“Caring for our people and ensuring we are the best place to give care is a top priority for MUSC Health. The challenges after the COVID pandemic have really highlighted the workforce challenges for every organization and the importance of supporting our teams. We are committed to creating the best work environment to advance our mission of improving the health of South Carolina and beyond,” Zaas said.

To compile the list of Best Employers by State, Forbes worked with the market research firm Statista. Statista surveyed 70,000 people across the country who worked for companies with at least 500 employees. Questions focused not only on traditional issues, such as safe working conditions, fair pay and an inclusive culture, but also on remote work and what businesses are doing to promote further diversity, equity and inclusion.

Tyree Walker, who as interim chief people officer oversees human resources for MUSC Health, said the ranking could have multiple effects. “I think it’s

good for morale. It’s good for retention, and it’s good for attracting staff to the organization.”

This is not MUSC Health’s first recognition this year. In May, Forbes included it on its list of Best Employers for New Grads in the health care and social industries. And in July, another publication that posts closely watched annual rankings, U.S. News & World Report, named MUSC Health University Medical Center in Charleston the top hospital in South Carolina.

In both of the Forbes rankings, the publication listed MUSC Health’s total number of employees as 25,000. That includes not only people who work for the clinical wing of MUSC, MUSC Health, but also the academic side, MUSC.

That total, substantially bigger than just a few years ago, also reflects the growing reach of MUSC Health. Acquisitions of hospitals across the state in recent years have connected both urban and rural areas to the state’s only comprehensive academic health system – and given students more opportunities to learn in a variety of clinical settings.

Walker said they should all be proud of the hard work and teamwork that have contributed to the success reflected in the latest Forbes ranking. “You wouldn’t get an honor like that if you didn’t have top-notch employees.”

Letter from the
Office of the

PRESIDENT

Dear MUSC family,

The beginning of a new academic year is a special time on the MUSC campus in Charleston – the excitement and anticipation generated by our new and returning students are palpable and serve as a reminder of the great honor and responsibility that we collectively have in shaping the trajectories of future health care providers, educators, scientists and professionals.

This year, things look more “normal,” if you will, as we’ve reached the endemic stage of COVID-19. Much attention has appropriately been paid to the sacrifices and hard work of the members of the health care teams in the last two years because of all things COVID. This time of year reminds me that we also need to take a moment to recognize and applaud the “above and beyond” contributions of our University faculty and staff members as well.

We are very privileged to have every one of you as a part of the MUSC family. Your dedication to high achievement and the betterment of others is visible through your passion for teaching, your scientific pursuits, your compassionate care and your commitment to the fulfillment of our mission. I want to underscore just how critical each of you is; I genuinely believe that your continued commitment to our common values – innovation, collaboration, compassion, integrity and respect – is having a positive impact, not just in South Carolina but across our nation and the world.

In fact, you are what differentiates MUSC from its academic peers and from being “just another community hospital system.” You’ve clearly demonstrated that it’s part of your nature to persevere in the face of unprecedented challenges. After all, many of you stretched beyond comfort zones and pushed into a new realm of online teaching. Some of you had to delay important research projects and pivot to taking on pandemic-related work. And, unfortunately, some of you took hits to your career development because of the many challenges brought on by the pandemic. The sacrifices you made to ensure that our students could graduate on time and with the high-quality educations we promised them did not go unnoticed or unappreciated.

In closing, I thank you for your achievements and your tireless dedication. You are important, admired, respected and valued, and you inspire me and those we serve, across the mission, every day.

Yours in service,

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



Cole

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point, and many just aren't getting that sick. I think people are just over it. I hate to say it, but I think a lot of folks are going, 'I'll just take my chances,'" she said.

But Scheurer cautioned that people who are at higher risk, such as older Americans or those with preexisting health conditions, should seriously consider getting this booster. And for those who aren't in the higher-risk category, one motivator to get this booster might be to avoid getting long COVID, when virus-related symptoms can linger indefinitely beyond an infection.

As for the science behind the new booster, Scheurer said it was synthesized in the same way the first vaccine was, only it's bivalent, meaning the encoded messenger RNA targets two spike proteins, instead of one: the original virus and Omicron and its known subvariants. Additionally, the dosage for this one is a little lower.

"I think it's important that people know that this is intended to act as a

booster, not a stand-alone vaccine," she said. "Meaning that for people who haven't been vaccinated, the course of action is to get your original two doses and then this."

Two boosters will be available: one by Pfizer BioNTech, for use in people age 12 and up, and the other by Moderna, targeted to those 18 years and up. MUSC expects to receive the Pfizer booster.

Though MUSC is in the process of decommissioning all of its stand-alone vaccine sites, the new booster will be offered at the MUSC Health Pharmacy at Rutledge Tower as well as by most, if not all, MUSC Health affiliated primary care physician sites.

Though things seem to be trending in the right direction in this country, Scheurer still remains vigilant.

"Given the volume of people who have gotten Omicron, I'm kind of surprised we haven't had another rapidly evolving variant," she said. "I think we've been pretty lucky. But then again, this might just be the new normal – a world where we coexist with COVID and life goes on."



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of stipend support for postdoctoral fellows and one year of support for clinical fellows during this critical juncture. Fellowships will be awarded to promising postdoctoral or clinical fellows who are focused on finding ways to prevent and cure cancer. For clinical fellows, this award is intended to support additional fellowship years for physician-scientists to focus on scientific research.

Ph.D. and M.D./Ph.D. candidates in all disciplines are eligible.

For more information, please visit:
hollingscancercenter.musc.edu/research/funding/fellowship



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Blog

CUT TO THE CHASE



MUSC Volunteers: Priceless

BY DAVID J. COLE

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It's early on a Wednesday morning, and as I am heading out the door, I ask Kathy what's on her agenda today. She flashes me a big smile and reminds me that today is her day to rock babies at the MUSC Shawn Jenkins Children's Hospital (and by the way, why don't I know this considering she has been volunteering there almost every Wednesday for the last eight years?) I mumble something as I stumble through the door and laugh later as I think about it – rocking babies at SJCH is definitely her happy place. Her enthusiasm has never waned, and her positive energy is contagious. Later on, my mind wandered away from my personal favorite volunteer to the approximately 1,000 other big-hearted volunteers currently giving of their time, talent and compassion to MUSC and those we serve.

Sometimes these volunteers are involved in work that flies under the radar, so much so that many on our campuses don't even realize that they are there. Others are more easily identifiable as they give of themselves when greeting nervous families at admissions desks, rocking babies in the NNICU, providing a human touch at the end of life for patients with no family present, playing

music, providing pet therapy or while learning more about a potential career path. No matter their station, role or effort, these individuals give freely of themselves to some larger undertaking that moves forward our mission of education, research and patient care. The key word in that last sentence is "freely." And while they don't receive or expect financial reward or some other overt recognition, most will tell you that they end up receiving so much more than they give.

I won't run through the laundry list of studies and first-person evidence that supports volunteering as an important community service. I hope it will suffice to say that in the U.S., volunteerism takes many shapes and forms with a common result – tangible and intangible benefits to others and to oneself.

Interestingly, one of the key benefits is related to stress and anxiety reduction – for the volunteer. Notably, a key component to a successful volunteering experience is passion. Without "freely" giving of this passion, I would argue that you're being volun-told what you "should" do to help others. In my opinion, volunteering is about finding your passion and combining it with an opportunity where you can have the

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MUSC student turns unthinkable loss into triumph for cancer research

By KRISTIN LEE

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It's one of the worst moments many people experience – the death of a parent. And at just age 22, Valerie Salmon had lost both of hers.

This fall, she'll participate in LOWVELO 2022 and hopes that her loss will help to ensure that fewer people will go through what she has. Rallying the community together to find lifesaving cures for cancer, LOWVELO is an annual cycling event benefiting MUSC Hollings Cancer Center. Participants choose from one of four routes, a virtual option or stationary cycling and join together with volunteers, researchers and the community to celebrate cancer survivors and those who have been lost to the disease. It's the memory of her parents that's pushing Salmon ahead as she takes on the longest bike ride of her life.

"It's weird to have gone through it two times now and to see their different experiences," said Salmon. "With my dad, I wasn't able to really lean on anyone. I didn't really talk about it."

When Salmon was just 14, she lost her father, Robert, to pancreatic cancer. He was a carpenter for more than 40 years who loved working with his hands. He loved cars and often took Valerie and her twin sister hiking near their childhood home in Charlottesville, Virginia. When he got sick, she can remember pulling away. "I would tell my younger self to be there more," she said with a hint of regret in her eyes. "I really ran away, and I never wanted to be home, and it caused a lot of tension in my family. That was the hardest part to get over. I wish I would have just been home and spent time with him."

Hard as it was to cope and process the loss, Salmon said that experience helped to prepare her when the unthinkable happened a second time. During her senior year of college, she found out that her mother, Jennifer, had ovarian cancer. "Unfortunately, I do feel thankful that I was able to learn from the experience with my dad," she said. "So, this way with my mom, I kind of knew what to expect. I'm older. I'm more emotionally mature."

With her mother battling cancer,

Salmon graduated from Virginia Tech and just five days later packed up and moved to Charleston to start her graduate program in occupational therapy at MUSC College of Health Professions. She spent her first semester traveling back and forth to be with her mother and somehow still found peace in the middle of a personal storm. "I don't know if it was the slight change of scenery, change of pace, finally feeling like I had a purpose, but I never felt so healthy since being here," said Salmon. "I finally went to a really good grief counselor, and I think that really helped all through fall semester."

During her spring semester this year, her mother passed away but talking about her still brings a huge smile to Salmon's face. "My mom was active – swimming, biking, running, walking, yoga, hiking, anything," she said, chuckling. "She was a special education teacher, and if she wasn't teaching, she was out in nature with her friends."

Biking was her favorite, and when she first got sick, Salmon's mother wasn't able to do it. "Then she went into remission for a little bit, and that's when she really went ham on the biking. She would go like 100 miles." One time, her mother even biked the 140 miles from her home in Charlottesville, Virginia, to visit Salmon's sister in Newport News, camping on the side of the road along the way.

"That's probably why I'm doing LOWVELO," Salmon said of joining a team for this year's ride. "Because she loved biking so much. I think she would love that I'm doing this. She would be throwing all this bike gear at us! Helmets, the clothes, the biker shorts with the butt pads – all of it. I think she would be really proud. It's the one thing that keeps me going ... just knowing she would love it."

Salmon is not only biking in this year's LOWVELO, she'll be taking on the challenge of the 100-mile route on one of her mother's bikes – an extra special way to honor her. She's leading her peloton, the Training Wheels, in fundraising as well, and they're currently leading all registered teams.

Aside from making her mother proud, Salmon said LOWVELO is so important



Photo by Kristin Lee

Occupational Therapy student Valerie Salmon says her mother, who became an avid biker, would have been cheering on her participation in LOWVELO22.



Photo Provided

Valerie Salmon's mother and father.

because 100% of the money raised by participants funds research at Hollings Cancer Center, and although her parents both received treatment in Virginia, she remembers how much clinical trials helped. "Hollings is the only NCI-designated cancer center in the state, and all the money is going to research," she explained. "That means a lot to me. I really remember, with my mom especially, how much of a difference that made in her hope and drive to fight."

The loss is still fresh, and Salmon

admits that she has days when she wakes up and just knows it's going to be difficult to get through. But having the community of her classmates and her LOWVELO team has made all the difference. "I feel really thankful for my program and my peers. I've never felt so supported by any other group of people," Salmon said. "I just think it's really sweet that it feels like a very loving community, like everyone is coming together to support me and a good cause."

MEET DIANA



Diana D. Alford, PA

Department; Years at MUSC *MUSC Physicians, MUSC Health-Carnes Crossroads; six years*

How are you changing what's possible at MUSC

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Family *Husband, Gary; daughters, Emma and Hannah; son-in-law, Tyler; son, Brett; and granddaughters, Aubrey and Avery*

Hometown *My family is originally from northern Maine but dad was in the U.S. Air Force, so I lived in several places, but Charleston's home.*

Favorite summer memory *Visiting my grandparents in New England*

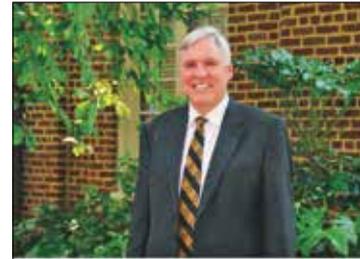
Best thing about living in Charleston *All the restaurants*

Favorite cable series to binge watch *"Bridgerton"*

Most rewarding thing about your job *Forming relationships with my patients and being able to work with the PA program and be a preceptor for students*

Something you've tried once and will never do again *Ride a roller coaster*

Your idea of a dream vacation *A Mediterranean cruise*



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Living the dream: A scientist's fascination with our brains while we sleep

BY **BRYCE DONOVAN**

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And just like that, the last clue falls into place. You've cracked the case. You turn to your crime-fighting partner, James Brown, the Godfather of Soul, give him a quick wink and tell him to hop in the submarine because, "We're headed back to Radio Shack!"

And then you wake up.

Turns out, it was only a dream ("Get Up!"). Scientifically speaking, dreams are stories and images that our minds create while we sleep. They can be crazy. Magical. Or just downright terrifying. Sometimes they make sense; sometimes they don't.

Thomas Uhde, M.D., chairman of MUSC's Department of Psychiatry and Behavioral Sciences, has spent the better part of his career investigating fear related images, cognitions and arousals in sleep and during transitions into and out of sleep.



Uhde

"To me, dreams can be about events that are relevant to our lives at the time," Uhde said. And though doctors and researchers already know a great deal about dreams and sleep-related cognitions, he explained, there is still a lot that they don't know. Vivid dreams or images can be elicited by medications or recreational drugs and sleep-related visual hallucinations can be caused by a number of different underlying neuropsychiatric or sleep disorders. If that's the case, he said, then you address and treat the underlying disorder.

But sometimes, he said, a patient with no underlying medical disorders will

come to see him with a dream that is troubling them.

"Then," he said with a thoughtful pause, "the relevant question becomes, 'Well, what does the dream mean to you?'"

A NEW MOVEMENT IN DREAMS

In 1951, a University of Chicago researcher by the name of Eugene Aserinsky, a man who was completely fascinated by the phenomenon of dreaming, decided to hook up electrodes to his 8-year-old son in the hopes of better understanding what was going on when we sleep. In order to minimize disruption, Aserinsky ran the wires, which were attached to electrodes on his son's head, to an adjacent room and into a machine that monitored brain waves.

After calibrating the machine, he turned out the lights and said good night to the boy. A few hours later, while drinking his second cup of coffee, Aserinsky noticed the machine registering lots of eye movement. He hopped out of his seat and went next door to check on his son to see what woke him, but when he walked in, he was shocked to find him still asleep.

And just like that, rapid eye movement (REM) was discovered. And with it, the study of dreams took off like a tiger riding a rocket-powered rainbow.

From that one discovery, scientists learned all sorts of fascinating stuff, but none more vital than the fact that the electrical activity in the brain is virtually the same whether a person is awake or in REM sleep.

"Basically, when you're in REM sleep, you can breathe and move your eyes, but you can't move the rest of your body," Uhde said. "From an evolutionary perspective, this is probably a good thing. You know, that way you don't take a swing at your spouse when you're having a dream about a fight."

After scientists discovered REM, things



iStock Photo

Sometimes dreams make perfect sense. And other times, you're sitting on a hovering, spiral section of the ground – because, hey, that's normal – looking off into the distance.

started to fall into place. Over time, it became generally agreed that there were five stages of sleep. Stages 1 and 2 are often referred to as "light sleep." During stages 3 and 4, sleep becomes a little deeper, but the body is still at rest. Then comes stage 5, or REM sleep.

Uhde said it takes approximately 90

minutes for a person to reach REM sleep, and it can sometimes only last for a few minutes. But then, the cycle starts all over. In a typical evening, we might enter REM sleep three to five times. The more cycles you have, typically the more concentrated or intense it becomes.

See **DREAMS** on page 11

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HEARING *Continued from Page One*

is very important to ensure the hearing aids never get too loud, are appropriate for the child's hearing level and age and provide access to important speech sounds needed for normal language development and learning in school."

But people who do qualify for over-the-counter hearing aids could see – and hear – real benefits, Duffy said.

"It definitely gives more access to people who don't have the financial ability to buy traditional hearing aids. It also might push people who are aware of their hearing loss to try amplification sooner than later. The OTC options will give those with less hearing loss improved access to devices that meet their needs and are less expensive than current options."

Duffy said the over-the-counter hearing aids will probably cost between \$500 and \$1,000 per ear. "They will either be sold single ear or as a set. Currently, most are sold as sets."

Prescription hearing aids cost substantially more than that. "They typically range from \$1,000 up to \$3,000 per device on average, depending on the technology inside of the hearing aid."

Her reference to the technology level gets at a key difference between over-the-counter and prescription hearing aids.

"In prescription hearing aids, the price is mostly

"It definitely gives more access to people who don't have the financial ability to buy traditional hearing aids. It also might push people who are aware of their hearing loss to try amplification sooner than later."

Meredith Duffy, AuD

affected by the number of automatic features and the number of channels – or bands – that the sound gets filtered through to create both a natural sound and an improved ability to separate background noise and speech information for better listening in noisy environments."

You can't get those features in over-the-counter hearing aids, Duffy said. "You'd have to go to an audiologist for that."

You'd also have to go to an audiologist to get a full hearing test. "We test your hearing at different frequencies or pitches. Often, people have different hearing across the pitch range, and they may have different hearing in each ear. When an audiologist programs hearing aids, we use the hearing test to more

accurately assign appropriate output for each ear and per pitch. It's a much more customized experience."

That customization includes making sure the prescription hearing aids are the right fit. "We run tests with the hearing aids in the patient's ears to verify that the hearing aids are giving the correct amount of gain, we call it, or output that's necessary for their hearing loss. We also show them how to use the hearing aids, how to put them in their ears, how to charge them or change the batteries and how to keep them clean and maintain the devices."

But Duffy said cost has muffled demand for hearing aids among people who aren't financially comfortable. Selling them over the counter as well as by prescription could help change that.

The over-the-counter versions have been tweaked to help protect the public. "The new FDA ruling has lowered the maximum output level so that a wearer is not at risk of noise-induced hearing loss on top of the hearing loss they already have. They also limit the depth that the hearing aid goes into the ear so it does not put the eardrum at risk of being touched or damaged," Duffy said.

"Other than that, they are going to be accessible for pretty much anyone. It's still strongly recommended that you see an audiologist to confirm that the hearing loss is no more than a mild to moderate severity and to rule out other medical issues that may be causing the hearing loss, ranging from earwax buildup to a tumor."

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VOLUNTEERS *Continued from Page Three*

greatest positive impact.

In FY 2021 alone, MUSC volunteers provided more than 38,000 hours of service in 22 locations and, remarkably, many of them stood with us during the pandemic, finding ways to stay connected and pivot as needed to help us as we navigated the unprecedented. They do everything mentioned above, and in the past several years, the volunteer program expanded further to include an emerging best practice in the health care industry – including the patient and community voice into the design and delivery of care.

Our first test case of this innovative volunteer and process improvement model was used during the design and construction of the MUSC Shawn Jenkins Children's Hospital. I'm pleased to tell you that this model not only continues today, it has grown exponentially to have even greater impact across the health system, with more than 10 patient-family advisory councils serving both pediatric and

adult populations. You see, the idea behind this model is to engage volunteer patients and families to offer their unique perspectives at the same tables with care team members to promote a patient- and family-centered culture in all aspects of care delivery and in health care education.

Some additional examples of this relatively new model include creating discharge packets that provide opportunities for mental health education and support for better continuity of care, fine-tuning patient education for better compliance with care plans and inviting our Patient and Family Advisory Council advisers to guest lecture in all six of our colleges to enhance our students' understanding of the importance of putting patients and families at the center of all that we do. Our PFACs are making a difference for our patients and inspiring our students and educators.

So, by recognizing and reflecting on the enormous value that our MUSC volunteers add to our day-to-day mission, I hope that in the days ahead,

you'll take the initiative to thank volunteers who may be working in your area for all that they do to enable our mission, and perhaps in the future, you'll consider how you might give back to those organizations and causes that align with your passion and service to others as well.

And finally, an enormous thank you to all of our volunteers (including my wife – maybe this piece will get me out of the “forgot what you are doing today, dear” doghouse) who have chosen to be a part of the MUSC family and make

a difference in so many lives on a daily basis.

Perry V. Halushka Research Day set for Nov. 4, research abstracts due Sept. 9

The 2022 Perry V. Halushka Research Day will be held Friday, Nov. 4 at the MUSC Wellness Center Gym. Abstracts are due at 12:59 p.m., Friday, Sept. 9. For information, visit <https://gradstudies.musc.edu/about/news/musc-research-day/abstract-submission-instructions>.

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Tuesday	September 13	6pm	Baxter Patrick Library, James Island
Thursday	September 15	10:30am	Poe Library, Sullivan's Island
Thursday	September 15	6pm	Mt. Pleasant Mathis Ferry Branch Library
Monday	September 19	10am	Edisto Library, Edisto Island
Monday	September 19	6pm	Virtual via Zoom

For September times and to register, go to
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SOA student's summer in lab fuels career ambitions

BY LESLIE CANTU

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A summer in a lab at MUSC Hollings Cancer Center may end up changing one student's career path.

Eva Allen, a senior at Charleston County School of the Arts, interned in the lab of Leonardo Ferreira, Ph.D. What was meant as an internship of a couple of hours a week bloomed into a fully immersed lab experience and a passion for research for the young singer.

"I knew I wanted to go into medicine in some sort of fashion, but I always thought that I wanted to be a doctor," Allen said. "And now that I see this side of medicine, medical research, I've kind of changed my mind a little bit. I might want to take a few years to work in a lab and be able to have that innovation side of medicine instead of just treat, treat, treat patients.

"Now I'm thinking about maybe doing a Ph.D. instead of an M.D.-Ph.D."

Allen is already pretty familiar with the patient side of medicine. She has Type I diabetes, diagnosed when she was just 2 ½ years old.

Just in her young lifetime, she's seen how innovation can change patients' lives.

"My entire life is different from when I was first diagnosed," she said. "I mean, my mom used to wake up every single night and check my blood sugar. For the first 10 years of my life, she did not get a full night of sleep. Well, now I have a continuous glucose monitor that checks my blood sugar every five minutes and sends it to my phone and to my mom's phone. And it'll alarm if my blood sugar goes out of range."

By working in Ferreira's lab, Allen got to contribute to research that could help her and other people with Type I diabetes and other autoimmune diseases.

Ferreira works with regulatory T-cells (Tregs) and manufactured chimeric antigen receptor (CAR) T-cells, with the ultimate goal of improving immunotherapy options for people with cancer and autoimmune diseases.

"This idea that we can use the immune system to kill things – we can also use the immune system to prevent things from getting killed," Ferreira explained. In Type I diabetes, for example, the immune system destroys cells in the pancreas that produce insulin. "That's, I think, the next frontier of immune therapy – is to regulate inflammation of immune disease."

Allen said she felt empowered by working on this research.

"It makes you feel like you have more control over something that you felt like you had no control over for a really long time," she said.

And though it was intimidating at first to walk into

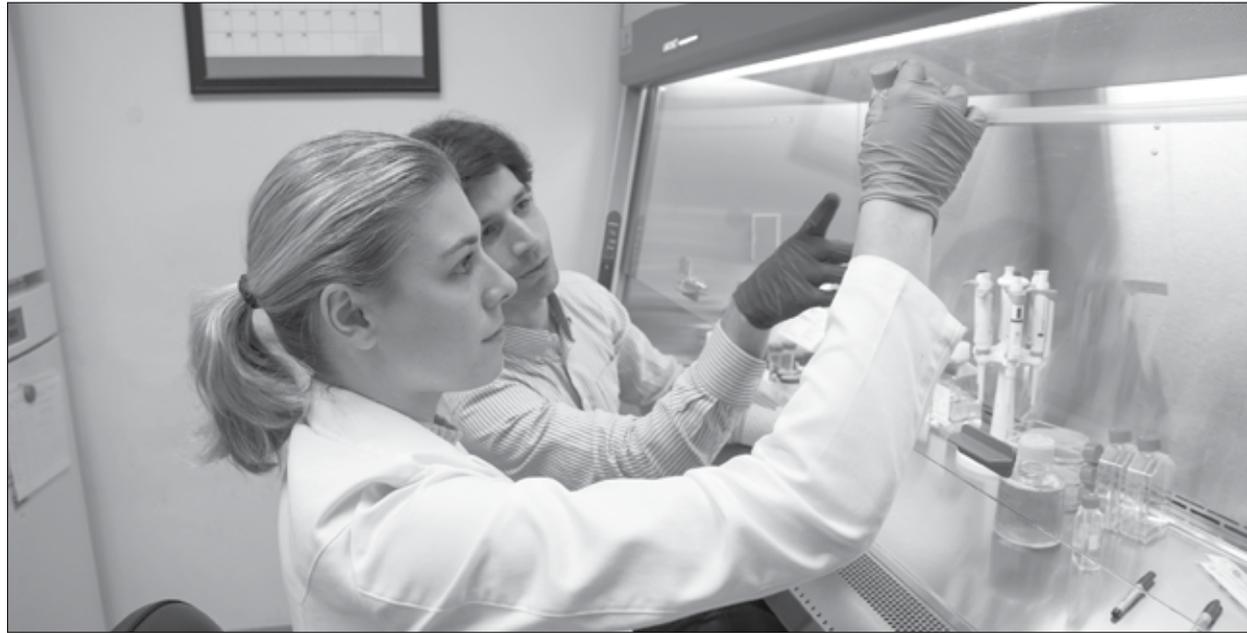


Photo by Kristin Lee

Eva Allen thought she would spend her summer internship watching others – instead she found herself acting as a full member of the team.

"This idea that we can use the immune system to kill things – we can also use the immune system to prevent things from getting killed. That's, I think, is the next frontier of immune therapy – to regulate inflammation of immune disease."

Leonardo Ferreira, Ph.D.

the lab as a high school student, she said she has loved the experience.

"Everybody here has opened the door and been encouraging and just so thoughtful," she said. "I thought I was going to walk in and be just watching." On her first day, however, Ferreira asked her to take a seat – that she was going to work and actually take part in things.

"And I was like, 'Oh, my God. What?'"

Ferreira's expectation that she "do" rather than watch might have been because of how impressed he was with her. He's worked with high school students before, he said, but never one as mature, dedicated and capable, he said.

And truth be told, her initiative reminded him of himself, he said. He recalled that when he was a

freshman in college, he wanted to participate in a lab fellowship but was rebuffed because it wasn't open to freshmen. But because he showed interest, the professor invited him to stop by the lab, and he ended up working there throughout his college years.

That kind of initiative can be important in science, he said. Similarly, Allen didn't come to the lab through an established, official program. Instead, a science teacher at SOA asked students in Advanced Placement Biology if they'd like to work in a lab for the summer.

"She just walked in one day and was like, 'Hey, I did research at MUSC, would any of you all be interested?'" Allen recalled. "We thought it was a program. We didn't know that she was just cold emailing professors at the university."

But once the teacher, Mary Kate Rumph, made the connection, it was up to Allen to sell herself. She read everything on the Ferreira Lab webpage – Googling a lot of the terms to make sure she understood – and was able to show Ferreira that she was interested in the work, not just checking off an internship box at her parents' direction.

"I was very impressed from the get-go," Ferreira said.

Allen said she'll take what she's learned through college and into grad school.

"I've learned so much, and I'm so thankful for this experience," she said.

Not only has she gained practical experience in a lab, but she will also gain her first co-author credit when the lab publishes a paper later this year.

Supporting community well-being

MUSC Health
& Well-Being



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

Generosity, volunteerism and concern for the well-being of others are deeply held values shared by the Charleston community. Similarly, MUSC has made an organizational commitment to serving the well-being of our community, as demonstrated in the Imagine MUSC 2020 strategic plan goal of Building Healthy Communities. Prioritizing community well-being allows our organization to align our commitment with the resources and activities needed to achieve this goal. OneMUSC, our current strategic plan, also has a specific initiative dedicated to community service, health and well-being.

Our commitment is not just to lead by example but model healthy behaviors through a supportive culture and the development of innovative and collaborative programs and partnerships in our community. We recognize that

we cannot improve the health and well-being of the community alone and therefore partner with dozens of organizations to develop relationships to tackle the most difficult issues facing our communities. A collaborative spirit among nonprofit organizations and leaders helps to leverage resources and ensure that programs and outreach efforts are as effective as possible.

The Greek philosopher Aristotle once said that the essence of life is “to serve others and to do good,” and not only is volunteering great for local communities and society as a whole, but it also provides mental, physical and emotional health benefits for volunteers themselves. People who volunteer manage their stress better and feel a stronger connection to their communities. A 2017 study conducted by United Healthcare and Volunteer Match found that of

respondents who volunteered in the past 12 months, 76% felt healthier, 94% felt it improved their moods and 78% reported lowered stress levels. In all of the pathways we take to good health, being a volunteer can help to make a meaningful difference.

For these reasons, a team of MUSC leaders are seeking to develop a volunteer program. Led by new MUSC Health Charleston chief operating officer Jessica Johnson; Quenton Tompkins, director of governmental and community outreach; and director of Health Promotion, Susan Johnson, Ph.D., the team is asking MUSC community members to consider how they might represent MUSC and inspire their colleagues to join them in support of our community. Each month, the team will identify a community service project or event to support through MUSC employee engagement. Participants will receive an MUSC T-shirt and will be eligible for additional prizes based on level of engagement. The team plans to seek input on a program name and T-shirt design as well as support through committee service and/or serving as a volunteer champion.

A Microsoft Teams channel has been created to provide a place where the MUSC community can learn about service opportunities. To join in via Teams, click Join a Team, search for MUSC Community Volunteer Opportunities and enter code xhopns6. Information on events and how to support this program will be shared on the channel. We encourage participants to share their volunteer activities with others in the chat so we can coordinate groups and distribute T-shirts. For more information on how to join this Teams channel, please email Kim Balaguer at balaguer@musc.edu.

On Sept. 17, MUSC will participate in the 2022 Beach Sweep/River Sweep, South Carolina’s largest one-day volunteer waterway cleanup event. Every 3rd Saturday in September, since 1988, thousands of South Carolinians have cleared beaches, rivers, lakes, marshes and swamps of aquatic debris. The S.C. Sea Grant Consortium leads the beach

cleanup efforts, while the South Carolina Department of Natural Resources leads the inland cleanups. Join the effort at over 20 sites in the Charleston area, both on land and water. Visit <https://www.sceagrant.org/bsrs-sites/> for sites and volunteer coordinator contact information to register.

During the month of October, we’ll support Charleston Habitat for Humanity, building homes, communities and hope throughout the Charleston area. Charleston Habitat for Humanity welcomes individuals and volunteer groups, regardless of prior experience and skill. Volunteers can assist with a new affordable home build, in the ReStore, in the administrative office or with special events. ReStore volunteers can expect to organize and price donated items, provide assistance to ReStore customers and assist in keeping the store clean and tidy. Construction site volunteers can expect to help with framing, laying the floor system, roofing, painting, landscaping, etc. Visit <https://charlestonhabitat.charityproud.org/VolunteerRegistration/Calendar> to sign up for a volunteer slot in October.

Nov. 16 through 18, we’ll join over 3,000 community members to support over 80 projects in the Tri-county area. For 20 years, Trident United Way has hosted the largest single day of community service in the Tri-County area on its Day of Caring, thanks to employers, teams and neighbors coming together to make a difference. This year will triple the impact from a single Day of Caring to three Days of Caring in an effort to engage more volunteers, provide more flexibility for completing projects and deliver more impact to the Tri-County.

For information, join the Teams channel or email Johnson at johnsusa@musc.edu.



2022 MUSC & MUHA Virtual Benefits Fair Live Webinar Sessions September 26th- 30th, 2022

The University Human Resources Department will be hosting a Virtual Benefits Fair the week of September 26th-30th, 2022.

The fair will include free live webinars with several vendors including AFLAC, AIG, Empower Retirement, MetLife, ASI Flex, TIAA and The Standard. Webinars will be held from 9am to 4pm EST.

Employees are encouraged to attend webinar sessions during the week of the fair to learn about plan changes effective January 1, 2023, retirement preparation, and vendor product offerings.

Direct any questions regarding the MUSC Virtual Benefits Fair to benefits@musc.edu.



DREAMS *Continued from Page Six*

Just like Aserinsky found half a century ago, if you just saw brain activity during REM, you wouldn't be able to tell if a person was awake or blissfully dreaming away.

FORGET ME NOT

More often than not, when we wake up in the morning, we don't remember having had any dreams. But other mornings, those memories are so intense, it can be hard to know — at least for the first few seconds that we're awake — if the experience was real or not.

Uhde said a lot of what determines whether we remember our dreams has to do with when we wake up in our sleep cycle. If you awaken from REM sleep or have just come out of it and are just waking up, that is often when you best remember them.

He said that keeping a dream journal by the bed is the best way to recall them. "You've got to get it down right away, or it's liable to slip away," he said.

He explained how there are countless

examples of people using their dreams as a source of inspiration. Whether for composing music, painting or writing a book, a dream journal can be extremely useful, Uhde said.

He also said that the same technique can help for people who are having recurring nightmares. To put those dreams on paper can allow someone to assess them more logically, and in time, change the negative perceptions associated with them.

SCIENCE MEETS SUPERNATURAL

But for all the discoveries and advances that have happened over the years, the field of sleep — and more specifically dreams — is still largely an unknown. For instance, we still don't know what many of our crazy dreams mean. Sure, there are some classic categories that usually have simple interpretations, like a dream about falling might be related to an interpersonal conflict. Or a dream where something really mortifying happens to you could come from a real-life fear of embarrassment.

It's those lesser understood ones, along

with any correlated sleep disorders, that most fascinate Uhde. Things like sleep paralysis when a person experiences sudden muscle weakness or paralysis accompanied by vivid dream-like images or hallucinations — which typically take place going into or coming out of sleep. The person feels totally alert during these episodes and will often have difficulty distinguishing whether it's real or not.

"These initial episodes can be profoundly anxiety provoking for a person," he said. "People say they are the most frightening experiences of their lives."

Or the ones who have dreams that serve as some sort of epiphany.

"It's a very small proportion, but there are some people who have this sense that they've connected with something much greater than themselves," he said. "Often, a patient can't describe it. It's not necessarily religious, but rather, they feel as if they've made contact with a powerful force — that there's something greater out there. Very often this can stay with the person for the rest of their life.

The poignancy of that for me is what's so

incredible."

Uhde used to do in-depth interviews with patients who had these type of REM-related experiences. He'd tell them that what they were experiencing was a known sleep phenomenon. For some, that gave them a sense of relief — "OK, so this is just a thing, and it happens to other normal people too." But a few, they would tell Uhde, "Look, I understand this is the best information you have about this, but maybe we're just not smart enough to know what's going on here because the experience is so profound."

And it's those people — and the still vast gap in our knowledge about dreams — that drive Uhde's passion never to stop exploring the science of sleep.

"First and foremost, I'm a scientist and physician," he said. "But to see people who experience something that changes their lives forever and appears to have a greater therapeutic impact on their sense of purpose and well-being than our current medications or therapies can produce? Yeah, I really want to know how that happens."



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

TRAFFIC SAFETY

ACCELERATE	BRIDGE	EXHAUST
ACCIDENT	CLOVERLEAF	EXPRESSWAY
AIRBAG	CRASH	FAST
ASPHALT	CRUISING	FUEL
AUTOMOBILE	CURVE	GEAR
AVENUE	DANGER	INTERCHANGE
BOULEVARD	DEFENSIVE	LICENSE
BRAKES	DENT	PATROL

O	C	R	U	I	S	I	N	G	F	D	I	P	P	B	S	V	Y	M	C
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