MUSC catalyst news

DECEMBER 20, 2019

MEDICAL UNIVERSITY OF SOUTH CAROLINA

VOL. 36, NO. 26



Angel Tree Parade

MUSC answers the call to help.

8

A year well spent MUSC celebrates another banner year.

- 2 President's letter
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- **10** BOT update

Letter from the Office of the PRESIDENT

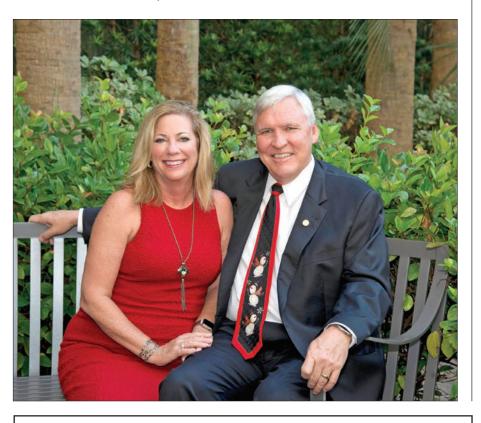
Dear MUSC family,

Each year the holiday season reinforces our significant connections to family and community. We want to let you know how important you are to us as members of the MUSC family. Your hard work and commitment to serve others are essential elements that help make this organization special. We appreciate all that you bring to MUSC.

We have a lot to be thankful for this year, including the exciting addition of new team members as we continue to grow our academic health care system. As we expand and transform, MUSC is better positioned to deliver top-quality education, research and health care to those who need us.

We wish you and your loved ones a happy and healthy holiday season and look forward to continued successes in 2020.

Dr. David and Kathy Cole MUSC President and First Lady



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December-January "Health Focus" on S.C. Public Radio

Visit www.southcarolinapublicradio.org/programs/health-focus

Dec. 23 – Segment #1 Topic: When Toddlers and Preschoolers are Picky Eaters Guest: Dr. Rachel Zweigoron MUSC Children's Health pediatrician Dr. Rachel Zeigoron talks about toddlers and preschoolers who are picky eaters and shares tips to make meal time positive and healthy.

Dec. 23 — Segment #2 Topic: Circadian Rhythm Guest: Dr. Chitra Lal

Sleep medicine specialist Dr. Chitra Lal will discuss circadian rhythm and how the 24-hour internal clock regulates cycles of alertness and sleepiness. She is an associate professor of medicine in the Division of Pulmonary, Critical Care, Allergy and Sleep Medicine

Dec. 30 — Segment #1 Topic: Substance Use Treatment in Teens

Guest: Dr. Brittany Bryant Bryant is a clinical instructor in the Department of Psychiatry and Behavioral Sciences and will highlight treatment for teens with substance use problems. She is the director of the

MOTIVATE Program for adolescent and substance use treatment at MUSC.

Dec. 30 — Segment #2 Topic: Prediabetes

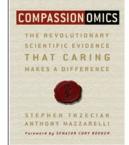
Guest: Dr. Elisha Brownfield

Division of Internal Medicine associate professor Dr. Elisha Brownfield will talk about prediabetes and the steps people can take to help delay or prevent the development of diabetes.

Jan. 6 – Segment #1 Topic: Colon Cancer Screening Guest: Dr. Ray Dubois

Prominent colorectal cancer researcher Dr. Ray Dubois will talk about the importance of colon cancer screening. He is the dean of the College of Medicine

Jan 6 – Segment #2 Topic: Choosing Wisely: Medicine for Several Common Childhood Illnesses Guest: Dr. Elizabeth Mack MUSC Childlren's Health Division chief for pediatric critical care Dr. Elizabeth Mack will share insights into choosing wisely as it relates to medicine for common childhood conditions.



MUSC Reads 2020

Free Books for MUSC Reading Groups!

Does compassion really matter in health care?

The Office of Humanities will provide free copies of Compassionomics to members of the MUSC community who agree to facilitate their own book discussion group between December 1, 2019 and April 2020.

- You recruit a group of two or more individuals from the MUSC community and send us the names and emails of your
- We'll provide each member of your group a copy of Compassionomics
- These books can be picked up in room 201 on the second floor of the Colbert Education Center and Library Building (in the CAE/Writing Center suite).
- You lead the discussion with your group at a place and time convenient to you
- All participants are invited to see the final presentations of MUSC students in the "Compassion in Action" Student Leadership Program, whose projects are informed by the evidence around compassionate care. This event will be held on April 21st, 5-7pm and will include a reception.

A limited number of books are available. Contact Lisa Kerr at k<mark>erli⊕musc.edu</mark> to place your order before November 12th!



Harleys, selfies and lots of presents define 2019 Angel Tree parade

By Bryce Donovan

donovanb@musc.edu

S omewhere between the high school marching band and the therapy dogs dressed as elves, sits 6-year-old Calliope Ditty. As the grand marshal of MUSC's annual Angel Tree parade, she gets to ride shotgun on the most important float in the procession. But even with all eyes on her, and the responsibilities of being the centerpiece of the day's festivities, Calliope remains steelyeved and focused.

"I just want to meet the princesses," she declares, referencing a float carrying Glass Slipper Productions fairy-tale princesses.

Truth is they'd probably like to meet her more. Three years ago, Calliope was diagnosed with leukemia and has been getting treatment — including a bone marrow transplant from her 7-year-old brother (a rock star in his own right) - and has been a trouper through it all.

"She's been amazing," her mother, Kaomi, said. "But when you're one of seven, it's kind of hard to get too much attention –

float.

Right photo: Parade

Ditty interacts with

the crowd from her

Volunteers and parade

participants unload

bagged gifts and toys at the Horseshoe donated by MUSC employees.

Below photo:

marshal Calliope

even when you're really sick." That's right, Calliope has six siblings, with a seventh on the way come April.

Much like the Ditty family, the Angel Tree parade was an impressive group. Harley Davidsons, bagpipe players, Santa Claus, even Charlie the Riverdog got in on the festivities, which meandered around campus, starting at the Charleston Medical District Greenway and ending on the Horseshoe.

Parade organizer and coordinator of Volunteer Services Melissa Kubu – who

rocked reindeer antlers, a green sweater and bright red pants - said that this year MUSC had fulfilled the wishes of more than 1,250 angels. That means MUSC and its employees assisted many Lowcountry families in need of a little help to make sure their kids have a happy holiday. Rows and rows of sparkling new bikes - metallic purple, neon yellow, fire-engine red – as well as giant white bags of clothes covered the grass like a new fallen snow and filled the space opposite the Colbert Education Center and Library as hundreds of MUSC employees, passersby and patients looked on.





Photos by Sarah Pack

A woman holds her rein-dog during the Dec. 6 MUSC Angel Tree parade.

"I think it's super cool that the whole hospital comes together to do this," Kaomi Ditty said. "It just warms your heart. We're obviously thrilled to be a part of it."

The annual parade serves as a celebration of the culmination of weeks of donations to the Salvation Army's Angel Tree program, a national effort that works to ensure about a million children, who would otherwise go without, receive new clothes and toys for the holidays.

Salvation Army Capt. Bethany Burns said that it's the moment when a family walks

back in to pick up their gifts that makes her job so fulfilling.

"When they come back and walk in and see the bikes that are rolling out and the gifts that are there, the joy on their faces is something you can't describe," Burns said. "These parents are going to be able to give their kids presents because of the generosity of others."

The Salvation Army will continue to take donations through Dec. 31. Visit them at salvationarmycarolinas.org.



MUSC Information Solutions-South Park employees blow soap bubbles from the back of a truck in the Angel Tree parade.

Beloved scientist, collaborator, mentor remembered by faculty, students

Staff Report

Craig Cano Beeson, Ph.D., a beloved mentor and accomplished research scientist at the MUSC College of Pharmacy, died on

Beeson was professor of Drug Discovery and Biomedical Science at MUSC and president and CEO of both MitoChem Therapeutics and MitoHealth.

After earning a Ph.D. in organic chemistry from the University of California, Irvine, Beeson did a postdoc in chemistry and immunology at the Stanford University School of Medicine. He joined MUSC in 2002, rising to the rank of full professor and acting as director of the Metabolomics and MUSC Seahorse Biosciences Development

The Seahorse Biosciences/MUSC Academic of the Year by the MUSC Foundation for Development Core was the first academic core utilizing an extracellular flux analyzer (Seahorse), which Beeson and his wife, Gyda, helped develop during the 17 years they worked closely together.

Perry Halushka, Ph.D., M.D., distinguished university professor and dean emeritus of the College of Graduate Studies, helped recruit Beeson from California and saw his scientific passion and commitment to create compounds in addition to actively mentoring startups that could be applicable drugs. He and ophthalmology and neuroscience researcher Baerbel Rohrer, Ph.D., collaborated to develop some potential drugs that may eventually be approved for the treatment of devastating retinal eye diseases, Halushka said.

"Craig had an amazing scientific passion for cellular and mitochondrial metabolism and helped develop the Seahorse instrument used to measure mitochondrial and cellular metabolism and help investigators gain valuable data for their grant submissions and manuscripts. As a friend and colleague, he was an extraordinary human being and the consummate faculty member. Craig was always upbeat and wore a smile. It was always a pleasure to be around him."

In October 2010, Beeson founded MitoHealth, a biotech startup that provides contract services to assess the effect of compounds on mitochondrial health. The company has also identified novel compounds that induce mitochondrial biogenesis - a process that is often rate limiting in acute ischemic pathologies and degenerative diseases. In 2011, he co-founded MitoChem Therapeutics, which announced last year that

"Students were awed by his deep knowledge, and were happy to follow him down the many tangents that his inquisitive mind took him while teaching..."

Paula Traktman, Ph.D.

it had developed a class of small molecules, mitoalexins, that protect mitochondria in tissues from the metabolic stress that causes many degenerative diseases.

In 2015, he was named MUSC Inventor Research Development for his leadership in creating molecular technologies in medicine, including eye drops to stop retinal degeneration that can lead to blindness. That same year, he was inducted as a member to the South Carolina chapter of the National Academy of Inventors. His collaboration with other MUSC researchers resulted in a total of 11 U.S. patents and eight applications, for MUSC's Foundation for Research Development.

Paula Traktman, Ph.D., dean of the College of Graduate Studies and the Hirschmann Endowed Professor in the Department of Biochemistry and Molecular Biology and Microbiology and Immunology, praised her colleague, defining Beeson as a "scientist's scientist."

"He never lost his passion for digging into the wonders of how biology works. He was an extraordinary teacher and mentor, and was always upbeat and engaged. Students were awed by his deep knowledge, and were happy to follow him down the many tangents that his inquisitive mind took him while teaching... He was so 'alive'; he will be sorely missed."

In 2017, Beeson was inducted as a National Fellow in the National Academy of Inventors, reflecting significant contributions to economic development, society and quality of

In addition, because of Beeson's love for teaching and his skill as a mentor, he left behind a considerable legacy among MUSC graduate and doctoral students. He mentored

See MENTOR on page 13



Photo by Anne Thompson

Dr. Craig Beeson was the keynote speaker at the 2017 MUSC Chapter of the National Academy of Inventors ceremony.

Dr. Beeson was an incredibly creative and productive researcher and a generous and kind colleague and mentor. He will be missed.

- Kathleen Brady, M.D., Ph.D., Distinguished University Professor Vice President for Research

The MUSC faculty has lost one of our best, well-respected and liked faculty members, Craig Beeson, who has been our colleague at MUSC for over 10 years. I have been collaborating with Craig ever since he completed his Ph.D. in my laboratory at University of California-Irvine almost 30 years ago. It was indeed a godsend for me when he joined my laboratory when I was a first-year assistant professor at UCI. We remained collaborators and great friends over the years since then, and there is no doubt in my mind how instrumental Craig was in my career development. I was overjoyed when we were able to recruit him to MUSC. He was one of the most creative and hard-working scientists I have known, and both was a wonderful teacher and mentor to his laboratory research

scientists, while being a great guy to all. We, including my wife Cathy and our kids Sarah and Sean, considered Craig and his wife Gyda as members of our family, and it was a terrible blow for all of us when we lost him.

- Thomas A. Dix, Ph.D. Department of Drug Discovery and Biomedical Sciences

Craig Beeson has been a dear friend of 15 years. He was a brilliant scientist, a beloved teacher, a generous mentor – a joyful, giving and humble soul. He will be deeply missed.

- Loretta Lynch-Reichert, M.S.

Director, research communications and strategic initiatives

Office of the Vice President for Research

Craig was a true friend and colleague. I was blessed to work with him throughout our time together in ASPET. Craig will be remembered for his great work as a scientist and the joy he brought to our lives.

- Tom Parry, Ph.D.,

Ovid Therapeutics, ASPET

See Beeson on page 13

MEET RON LOCKE



Ron Locke

Department and how long at MUSC *MUSC Health Lab Medicine/ART OR lab;*29 years

How are you changing what's possible at MUSC

Providing my patients with timely and accurate lab results

Family, pets and their names

Wife, Angela; daughters, Rebecca and Kelsey, age 21 (identical twins); cats, Coco and Mittens

Last book read

"Lord of the Rings" by J.R.R. Tolkien (for the third time)

A unique talent you have

Eyeballing the length of something

Best thing about living in Charleston

October through April

Your idea of a dream vacation

A ski-in and ski-out log cabin in the Rockies

Favorite movie quote

"Do. Or do not. There is no try." — Yoda









A little holiday Magic at MUSC

Basketball legend visits employees, children

By Bryce Donovan

donovanb@musc.edu

To be a competent doctor, among other things you need to display professionalism and poise under pressure. And then freak the heck out when a 12-time NBA All-Star passes you in the hallway at work.

That was the scene Tuesday, Dec. 10, as Anne Wanaselja, M.D., turned a corner on the second floor of MUSC's Children's Hospital during morning rounds. Not a short woman by any measure, Wanaselja found herself looking straight up at six-foot-nine NBA superstar Magic Johnson.

Wanaselja froze. Magic smiled.

She managed a "Hi!" but that was about it. Later she would admit it was a photo with the basketball legend she really wanted, but the words didn't quite come out. "He rounded the corner and was smiling so big.

I completely froze. I was just going to stand there and let him pass, but I don't know, he stopped and I'm so glad he did," Wanaselja said.

Magic gave the five-foot-nine anesthesiologist a hug and then had his colleague Dari Ruff snap a photo of them with Wanaselja's cellphone.

"You're shaking like a leaf," Magic said as they stood there, smiling.

"I know. I'm kind of freaking out," Wanaselja said.

"I had heard you were going to be here," she eventually muttered. "I just didn't think there was any way I'd end up meeting you."

Moments later, as Magic hopped on an elevator to go to the Atrium on the seventh floor, someone asked him if he ever got starstruck. "Absolutely," he said. "I was like that with Nelson Mandela." That might seem like a quantum jump in terms of celebrity



Photos by Sarah Pack

Magic Johnson made a surprise visit to MUSC, bringing along his trademark smile and energy.

stratospheres, but in defense of Wanaselja, the former South African president doesn't have five NBA championships.

Magic's visit to MUSC was a part of his

partnership with SodexoMAGIC, a company that offers food and facilities management solutions to companies like MUSC, with

See MAGIC on page 14

David Kent and Charlotte Lemon



Experience Matters

David Kent 24 years 843.606.0824 David@BuyersAgent.Net www.DavidKent.Net Charlotte Lemon 21 years 843.900.1322 Charlotte@BuyersAgent.Net www.CharlotteLemon.Net





IP02-184



Photos by Kim Geiger

MUSC President David Cole and first lady Kathy Cole had a chance to tour the MUSC Health Florence Medical Center. The center is among four community hospitals purchased earlier this spring by MUSC Health.



Dr. Cole and Kathy Cole walk through the cardiovascular ICU with Loren Graham, CVICU nurse manager, right; Costa Cockfield, chief nursing officer; Dr. Rami Zebian, chief medical officer; and Trish McLeod, assistant chief nursing officer.

MUSC partnership in Florence takes flight, new transplant services

Staff Report

MUSC President David Cole, M.D., FACS, and first lady Kathy Cole visited MUSC Health Florence Medical Center to attend a department directors meeting to share MUSC's vision for the future, along with Cole's thoughts and optimism for providing better care to our communities by joining forces with our care teams. As part of his visit, Cole and some of MUSC Health Florence Medical Center's leadership team rounded on care team members in select areas, including the 7th floor (36 bed medical surgical unit, primarily cardiac) and cardiovascular ICU (13 beds).

On Nov. 14, Cole returned to the area with a team of physician specialists including Derek DuBay, M.D., professor of surgery

and associate director of transplant, and transplant physicians, Luca Paoletti, M.D., medical director of pulmonary rehabilitation, Department of Pulmonary, Critical Care, Allergy & Sleep Medicine, and Jared White, M.D., associate professor of surgery and surgical director of the liver transplant program, to announce a new transplant and specialty outreach clinic to assist patients prior to being placed on the transplant list.

The new service provides a one-stop shop at MUSC Florence for patients living in the Pee Dee area of the state.

Cole was also able to visit the MUSC Health Marion Medical Center on Nov. 15 and met with department directors and rounded on care team members in the emergency department and ICU/medical surgical areas.

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2019 IN REVIEW

MILESTONES



MUSC set a new record, bringing in \$284 million in biomedical research funding.

An NIH grant established the new Center for Opioid and Cocaine Addiction at MUSC.



Trauma and Maternal Fetal Medicine joined forces to provide care in cases of placenta accreta, a potentially deadly pregnancy condition. The Hamidis, COM graduates, credit the intervention with saving Emrys' life.

> A new robotic bronchoscopy system offers a safer, more informative way of testing lung nodules for cancer. "It

North Charleston Mayor Keith Summey celebrated the opening of the MUSC Children's Health R. Keith Summey Medical Pavilion, a 100,000-square-foot facility that brings care closer to where people live.

> The College of Dental Medicine opened a new wheelchair and stretcher-friendly dental clinic.

> > Photo by Sarah Pack











DORIAN DAY

will make a huge difference," says Dr. Nick Pastis.



Hundreds of people rode in the inaugural Lowvelo bike ride to raise money for Hollings Cancer Center.





Teenage couple celebrates final moments in special ceremony



MUSC celebrates purchase of four community hospitals



Nurses' teamwork pays off on man's frightening flight



Iust another drill: Former Clemson quarterback makes the transition from football to dentistry



'I hope that I'll meet her in heaven'

Honoring History







In Memoriam

Dr. Craig Beeson • Dr. Maria Buse Dr. Cotesworth "Coty" Fishburne • Dr. Peter Gazes

Sen. Ernest "Fritz" Hollings

(AND NIGHT)

which brought both baby Karlah and staff karaoke

MUSC hunkered down for Hurricane Dorian,

as the winds blew throughout the Tri-county.

Dr. Tatsiana Beiko put on her dancing shoes to raise money for the American Lung Association in South Carolina.

Page design by Leslie Cantu

MUSC Board of Trustees Meeting

Update

During its regularly scheduled meeting, MUSC and MUHA Board of Trustees received mid-year updates on operations, philanthropy and major projects. In alignment with the state budget, MUSC and MUHA begin the fiscal year on July 1, thus both organizations are close to the half-year mark.

Board members heard updates on: ☐ The MUSC Foundation, an independent, supporting organization with \$625 million in assets that helps MUSC fulfill its missions through philanthropy and active, strategic investments.

☐ An energy conservation concept called co-generation that is being explored for its potential to save money through more efficient energy management.

☐ The MUSC graduate medical education (GME) program, which serves as a critical, required component to train medical residents and fellows as highly competent and compassionate physicians to serve the state, region and beyond.

In terms of where a physician ultimately decides to practice, Ben Clyburn, M.D., MUSC GME director, presented data showing that if a student attends medical school and completes residency training in South Carolina,



there is a better than 75% chance that this professional will ultimately practice in the state. If a newly graduated M.D. comes to the Palmetto State only to complete his or her residency training, there is a 50% chance that this individual will practice in the state.

"When we talk about MUSC, we usually reference our 3,000 students, but we don't often talk about our more than 780 residents," said David J. Cole, M.D., FACS, MUSC president. "The impact of what we have in terms of providing critical educational pathways is significant, especially in light of the national physician shortage. There are not nearly enough GME slots across the nation," he continued. "Current data would suggest that we would have to double our residency slots to be able to equal the conservatively predicted need for physicians

by 2025. The message is that accountable health community organizations like ours that provide GME are not getting enough resources to properly train enough physicians to meet our nation's needs."

Because federal GME funding has been capped since 1997, any subsequent growth in resident and fellowship training has been underwritten by the local institution as a part of the tripartite mission. This translates at MUSC each year to about \$25 million to \$35 million of training costs for GME /residents and fellows being supported by MUSC Health.

"GME is a critical mission, and we deliver significant training in this area. Most individuals do not understand that it's not enough to merely get an M.D. degree; to be able to practice medicine you must complete some form of accredited residency training," Cole added. "In my view, if the facts are that we are underserviced in critical areas of medical care in the state of South Carolina and GME is a critical pathway to help address those needs, then at some level GME should be viewed as a state resource and a state need."

☐ Linda Cox, interim vice president of Development and Alumni Affairs, reported that more than \$148.3 million has been donated in support of the MUSC Shawn Ienkins Children's Hospital and the Pearl Tourville Women's Pavilion since the launch of the campaign. The technologically advanced facility will open in 2020. Cox was recognized and lauded for her service during more than 18 months as interim leader for the MUSC philanthropy office.

☐ Board members voted unanimously to confirm the appointment of Kate Azizi as the permanent vice president of Institutional Advancement. which will encompass all the staff and responsibilities for



Azizi

the renamed Development and Alumni Affairs office. In this role, Azizi will lead MUSC advancement initiatives for the

See BOARD on page 14

Nurse leads policy change for employee living donors

By Leslie Cantu

cantul@musc.edu

When Laura Hoover saw a Facebook plea seeking a kidney donor for a friend's mother-in-law, she immediately knew she would donate.

What she didn't realize then was that her snap decision would open up a world of possibilities for thousands of potential donors and the innumerable transplant recipients, family members and friends who could benefit from living donations.

That's because her decision has led to a change in policy for MUSC Health and MUSC Physicians employees who wish to donate. The all-but-signed new policy aligns MUSC Health and MUSC-P with state employee policy and grants employees 30 days of paid leave to recover after donating an organ. The previous policy allotted only five days of paid leave.

Hoover, an endoscopy nurse in MUSC's Digestive Disease Center, was granted an exemption to current policy so her surgery could proceed. Although she wasn't a match

for her friend's mother-in-law, she was able to participate in a kidney transplant chain involving 10 hospitals that led to the motherin-law getting a kidney. Hoover's kidney went to a 12-year-old in Tampa, Florida.

Earlier this month, as Hoover sat in her hospital bed in University Hospital, she remembered her shock upon learning about the previous policy. She had already told her husband and her mother – also a living donor – that she intended to donate and was checking in with Human Resources when she learned she was eligible for only five days of paid leave.

But state employees get 30 days of paid leave, she said. And therein lies the rub: Not everyone who works at MUSC is a state employee. MUSC actually consists of three entities – the university, the Medical University Hospital Authority and MUSC P – and only university employees are state employees.

Undeterred, Hoover fired off an email to hospital leadership. Within 24 hours, MUSC

See Policy on page 15



Laura Hoover in her hospital bed the day after surgery to donate one of her kidneys.

Photo by Sarah Pack



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Researchers seek partnerships to improve health care with AI

By Paul Alongi

Special from Clemson University

Some of South Carolina's top researchers are exploring new ways they can work together to improve health care with artificial intelligence, an effort that is starting with pilot projects but could grow into a major collaboration.

The Artificial Intelligence Summit on Nov. 21 in Columbia brought together about 150 officials from Clemson University, MUSC and Siemens Healthineers.

Most were researchers who came from a wide variety of backgrounds, ranging from radiology to psychiatry and bioengineering to computer science. They met for nearly six hours in The Palmetto Club about a block from the Statehouse.

The idea was to get the researchers together so they could learn about each other's work and spark ideas for new projects.

The provosts from the two universities each put up \$25,000 to fund pilot projects that resulted from the summit. It's just a start, they said, as officials from the two universities continue talks aimed at establishing a larger partnership in artificial intelligence.

Robert Jones, the executive vice president for academic affairs and provost at Clemson, described artificial intelligence as a recent and rapidly growing phenomenon with capabilities to dramatically improve health care.

"Because it's so interdisciplinary, Clemson is extremely interested in developing strong partnerships internally and externally," Jones said. "We can think of no better partners than the Medical University of South Carolina and Siemens Healthineers."

Lisa Saladin, the provost at MUSC, said that artificial intelligence is the leading technology that will transform health care.

"The impact on health care is just beginning," she said.
"We have the potential to totally transform the way we provide care, the way we diagnose patients and how we intervene to make sure the right patients are getting the right treatment at the right time."

Clemson and MUSC reside on opposite ends of the state but have a long history of collaborating on research, especially

MUSC Catalyst News print team on holiday break until Jan. 10

The MUSC Catalyst News will not be published Friday, Jan. 3, 2020 and will resume its bi-monthly publication schedule on Friday, Jan. 10.

To share news, story ideas or for information, email or call Cindy Abole, editor, at Catalyst@musc.edu or 843-792-4107.

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Photo Provided

Clemson University Provost Robert Jones and MUSC Provost Lisa Saladin announce funding to support pilot projects at the Nov. 21 Artificial Intelligence Summit in Columbia that involved 150 officials from both institutions and Siemens Healthineers.

in bioengineering.

Several Clemson faculty members and students work in the Bioengineering Building on MUSC's campus in Charleston. The universities collaborate on two separate Centers of Biomedical Excellence funded by the National Institutes of Health.

Both institutions already have a variety of artificial intelligence research underway.

Clemson researchers are developing artificial intelligence to protect privacy on social media, inspect cars on assembly lines for defects and help save citrus trees from an incurable disease, just to name a few examples. Some of the Clemson research is enabled by the Palmetto Cluster, one of the nation's fastest university supercomputers.

MUSC is primarily using two types of artificial intelligence tools, predictive analytics and natural language processing, Saladin said. Researchers are using the tools to develop techniques that can help diagnose and treat a range of ills, including cancer, Alzheimer's disease, substance abuse, child abuse, epliepsy, aphasia, inflammatory skin conditions and cardiac issues, she said.

Mike Farrell, a vice president, enterprise services at Siemens Healthineers, said that he saw tremendous opportunity to bring together Clemson, MUSC and Siemens Healthineers to improve health care.

"What I'm most excited about is how we can take these great ideas from bench to bedside," he said. "We're developing a digital ecosystem, so if there's an application, an algorithm, or a tool that's being developed and validated, there is great potential to extend their availability beyond MUSC to benefit care providers and their patients around the world."









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Fourth quarter MUSC innovator awards recognize employees

Individuals, teams inspire innovative ideas, solutions

Staff Report

Sponsored by the Office of Innovation, the "I am an MUSC Innovator" campaign is designed to raise awareness of the many forms that innovation can take to inspire others and publicly recognize individuals and teams that are making an impact. For additional information, contact Jesse Goodwin, chief innovation officer (goodwijs@musc.edu).

Anita Ramsetty, M.D., medical director and faculty advisor, MUSC CARES Clinic, director of student service learning for the College of Medicine, assistant professor, Department of Family Medicine.

Problem — Despite completion of medical education and fellowship training in endocrinology, I realized that my extensive education had not prepared me to truly address nutrition and the complexity of its interaction with social factors that impact patient health. I could discuss carbohydrates but not food as my patients understood it, and I was poorly prepared to discuss options outside an ideal situation where my patient had access to everything "nonmedical."

Impact — My Josiah Macy Jr. Foundation grant was awarded this year toward my development of an integrated curriculum on underserved care with a focus on food insecurity. It is unique in its scope where the curriculum will extend through all years of medical school and in its focus on food insecurity, which affects more than 1 in 10 South Carolinians on average, but up to 3 in 10 in some counties and often higher in children. Curricular changes and developments have already begun with the assistance of preclinical and clinical course directors.

Recognition — Dana Mitchel at the Lowcountry Food Bank has been a strong advocate in developing this course, in providing resources and access for students who have taken a senior elective focused on underserved care.

Michelle L. Woodbury, Ph.D., associate professor, Department of Health Science and Research – Division of Occupational Therapy, College of Health Professions. **Problem** — Stroke is the leading cause of long-term disability in the U.S. It is common for a stroke survivor to have partial paralysis of one arm/hand, which makes it extraordinarily difficult to accomplish important self-care, work and leisure activities. With rehabilitation, stroke survivors can recover arm/hand functional movement, but there is a critical need to provide more opportunities for patients to self-direct their own rehabilitation during therapy "off hours" and at home. Impact — We invented, designed, pilot-tested, licensed, received FDA approval for and commercialized an interactive computer game for stroke rehabilitation called Duck Duck Punch (DDP). The game is played as the patient sits in front of a skeletal tracker and controls a virtual arm with his or

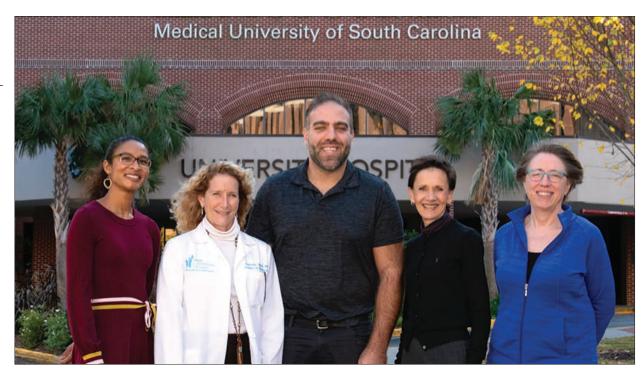


Photo by Anne Thompson

Fourth quarter MUSC innovators are Dr. Anita Ramsetty, from left, Dr. Dorothea Jenkins, Dr. Bashar Badran, Dr. Mary Mauldin and Dr. Michelle L. Woodbury. Not pictured: Dr. Amy Williams.

her physical arms reaching forward to "punch" virtual ducks on the computer screen. Importantly, DDP was deliberately designed via a unique collaboration between experienced stroke rehabilitation therapists and software engineers so that all aspects of the game elicit beneficial therapist-approved arm and postural movements. With National Institutes of Health Small Business Innovation Research Phase 2 funding, we iteratively evolved DDP from a single game into a comprehensive software platform called the Recover Rehabilitation System that includes a collection of therapeutic games and a web-based portal from which a therapist can monitor game play and alter game settings to enhance its therapeutic benefits.

Recognition – Austen Hayes, Larry Hodges, Ph.D., Kevin Jett – Recovr LLC; Scott Hutchison, MUSC COBRE in Stroke Recovery Research occupational therapist; and Christian Finetto, Ph.D., assistant professor, MUSC COBRE in Stroke Recovery biomechanical engineer.

Mary Mauldin, Ed.D., professor and executive director, Office of Instructional Technology and Faculty Resources, associate director of Education, Office of Interprofessional Education — Division of Education and Student Life Problem — I wanted to give an interprofessional group of students an opportunity to work together on a project to learn "about, from and with" each other that went beyond the traditional classroom experience. A group of faculty also wanted to give educators across the state an opportunity to come together to share innovations in teaching and learning. Impact — Key projects include: An interprofessional group of

students are currently completing an introductory course to 3D printing in which they have had the opportunity to learn from a variety of MUSC faculty members who are using 3D printing in their areas of specialty.

Students from MUSC and the American College of the Building Arts worked together to build a cob oven that is available for use in the Urban Farm.

MUSC founded the SC Conference on Innovations in Teaching and Learning in Higher Education. The conference was hosted at MUSC for two years with over 250 faculty and staff in institutions of higher education attending each year. Recognition — Jesse Goodwin, Ph.D., Mike Yost, Ph.D., Wally Renne, D.M.D., Ramin Eskandari, M.D., Ben Goldstein, Baber Khatib, M.D., D.DS., and Mark Semler for the 3D Printing Course; Dusti Anna–Coultas, Ed.D., Jeff Borckardt, Ph.D., and the staff of the Urban Farm for the cob oven, and Dusti Annan–Coultas and Melissa Hortman, Ed. D., for the SC Conference on Innovations in Teaching and Learning in Higher Education.

Amy Williams, DNP, assistant professor, College of Nursing Problem — According to the American Academy of Pediatrics, Latino children are diagnosed later and less often with developmental delays. At MUSC Children's Health, where we serve a majority first–generation Latino immigrant population, we often encounter unique social determinants of health including language, literacy, health care access and transportation barriers. This raises concerns that children in this clinic may have unidentified developmental delays

MENTOR Continued from Page Four

26 Ph.D., M.D.-Ph.D. and Pharm.D.-Ph.D. students and served on 41 thesis committees. In 2019, students of the College of Graduate studies voted him Teacher of the Year for the sixth time during his 17-year career at MUSC. The award is being renamed "the Craig Beeson Outstanding Teacher of the Year Award" in his honor.

"Dr. Beeson made considerable contributions to developing the basic science that fights disease and there are many generations whose health and well-being will be dramatically better because of his work," said Philip Hall, Pharm.D., dean of the MUSC College of Pharmacy. "But I think we will miss most his warmth, his humor and his ability to make each day a better day for having run into him."

Drug Discovery and Biomedical Sciences colleague Patrick Woster, Ph.D., professor and the SmartState Endowed Chair in Drug Discovery, Department of Drug Discovery and Biomedical Sciences, praised Beeson for his gifts as a scientist, teacher and mentor.

"Craig had a gift for engaging students, for getting them excited about research. More importantly, Craig understood the role of training students as an integral part of the

BEESON Continued from Page Four

"Ray Bradbury, in his classic novel 'Fahrenheit 451,' said this: 'Everyone must leave something behind when he dies, my grandfather said. A child or a book or a painting or a house or a wall built or a pair of shoes made. Or a garden planted. Something your hand touched some way so your soul has somewhere to go when you die, and when people look at that tree or that flower you planted, you're there.'

This passage certainly applies to our colleague Craig Beeson. Craig was able to amplify himself through the lives he touched and the students he trained so that we can be sure he is still here. To me, there can be no greater legacy."

- Patrick Woster, Ph.D.,

SmartState Endowed Chair in Drug Discovery, Department of Drug Discovery and Biomedical Sciences

"There was one word missing from Craig's vocabulary and that was "no." Whenever, he was asked to do something for an individual or colleague he always willingly agreed. His services to the Colleges of Pharmacy and Graduate Studies are Herculean.

For those of us who had the privilege of interacting with Craig, our lives were enriched by him. His ebullient, upbeat, cheerful personality was contagious. He will be dearly missed by all of us."

— Perry B. Halushka, Ph.D., M.D., Distinguished University Professor

Professor of Pharmacology and Medicine

"Craig, without you, MitoChem wouldn't have been created, sometimes I worry that without you MitoChem will have a tough

Dean Emeritus, College of Graduate Studies

time going forward, but we - Rick, Mike, Gyda and I – all promised you that we will make it happen. Hand on my heart. I want to say a few more words about Craig the person, the friend and colleague. What might you all not know? Having traveled with Craig to Vegas a few times to present to the Steve Wynn Foundation, I learned that he loved to gamble; go figure - as a scientist, what are the odds? Having spent time at his house, I learned that he loved animals. He has always had cats, some he adopted, some that adopted him. He loved to teach, as you all know ... And finally, he will be missed, but remembered as one of the good guys!"

Baerbel "Barb" Rohrer, Ph.D.,
 Professor, Department of Ophthalmology and
 Neurosciences and Neuroscience Research

academic life. He was highly invested in his students, and as a result gave a piece of himself to each of them."

He was a member of several professional societies including the American Chemistry Society Division of Medicinal Chemistry and

the American Society for Pharmacology and Experimental Therapeutics Division for Drug Discovery and Development. As a scientist, he was featured in more than 100 peer-reviewed publications in the areas of organic chemistry endocrinology, immunology and

mitochondrial biogenesis. Throughout his career at MUSC, Beeson brought in millions of dollars to fund his research program and companies.

He is survived by his wife, Gyda, one brother and three sisters.

Local professional group hosts annual minority scholarships, applications due Jan. 6

The Auxiliary to the Charleston County Medical, Dental and Pharmaceutical Association (ACCMDPA) Scholarship Program will award \$1,000 scholarships to African American students enrolled in MUSC's medical, dental or pharmacy programs. The Auxiliary is committed to reinforcing the importance of an inclusive, creative and productive health care environment. The purpose of the scholarship program is to encourage and reward academic excellence and help defray educational expenses for qualifying students. This is the second year this scholarship is being offered by this organization to minority students. Applicants must be full-time students in good standing enrolled for the current academic year. Applications can be submitted online at https://accmdpa.wufoo.com/forms/ zy4pokh1z0f3hf/

For information, contact Sshune Rhodes at accmdpa@gmail.com or 843-475-1332. Completed applications must be submitted electronically by Ian. 6, 2020.

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MAGIC Continued from Page Six

the goal of making a difference in the lives of its clients and customers. He wanted an opportunity to meet some of MUSC's Sodexo folks face-to-face and make some time to visit the kids in the Children's Hospital.

As he stood in front of the Sodexo employees in the Storm Eye Institute auditorium, Magic said the goal of his visit was to inspire others to be their best. The keys to success, he said, are a good work ethic and taking pride in what you do. These were the values instilled in him by his parents from a voung age.

"When I was in high school, every summer I worked on a trash truck, and during the school year, I did it on Saturdays."

Even at this early stage in his life, Magic was already being touted as a basketball phenom. But his parents made him continue to work that job, he said, in order to keep him grounded. "Man, I thought I worked hard, but my father - he was an employee at General Motors for 30 years - the day he retired, they gave him an award for never being late and never missing a day," he said. "Now that's work one. He also signed jerseys, basketballs, even ethic."

Magic was gracious with his time at MUSC, patiently allowing anyone who wanted an



Magic was gracious with his time at MUSC, patiently allowing anyone who wanted an autograph or photo with the NBA legend to get one.

autograph or photo with the NBA legend to

For nearly 30 minutes, Magic fielded questions from the group before generously posing for photos with whomever wanted the shirts some people were wearing. After a final group photo, he was off to the Children's Hospital to surprise any patients who

happened to be in the Atrium - though word got out pretty fast, and what started as a small handful of kids quickly swelled to dozens.

During his time with the kids, Magic played air hockey, posed for photos, signed autographs and mainly just sat and chatted with them, allowing them to momentarily forget about all their tubes and pains, even if for just a few minutes.

One of the lucky patients who got quality time with Magic was 11-year-old Jamarion Nealy. He and the former L.A. Laker played pool: Jamarion was stripes, Magic was solids. Though the look on Jamarion's face was priceless when he shook hands with the towering basketball icon, it was his father's jaw that nearly hit the ground.

"This is awesome," Brandon Singletary said. "I mean ... I wasn't expecting this. Magic Johnson? Standing right here playing pool with my boy? I love that guy and to think he's doing something like this for others. It's just ... awesome is the only word I can think of."

Jamarion, who is battling lupus and has been at the hospital for about a week now, was stoked by the encounter: "Getting to meet him makes me feel pretty great. I wish we could do this every day."

After he left and all the buzz surrounding his visit was slowly dying down, the three-time NBA finals MVP posted to his Facebook page.

"Today was a day only God could have orchestrated. I feel so blessed that I was able to spend time with hundreds of kids at MUSC in Charleston, SC dealing with health issues and bring a smile to their faces. I enjoyed meeting and taking photos with my SodexoMAGiC employees and thousands of doctors and nurses on staff."

Board

Continued from Page Ten

university and health system in all markets – local, regional, statewide and beyond.

Scheduled to begin her new role on Feb. 10, Azizi will lead the MUSC team of experienced philanthropy professionals. In collaboration with the president and key academic, clinical and administrative leaders, she will work to define and articulate a bold vision that builds upon existing momentum and excitement about MUSC, its accomplishments and its contributions to education, research and patient care. Azizi will report directly to President Cole and serve as a member of the president's advisory council.



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INNOVATORS

Continued from Page Twelve

or lack of capability to obtain necessary resources for early intervention if these diagnoses are made.

Impact – A program, sponsored by the Duke Foundation, arranged home visitation with culturally appropriate community health workers or "promatores" to work with at-risk children ages 0-5. Through this collaboration we have been able to complete real-time developmental assessments for children in this age group in their natural environment (the home) to better assess their strengths

and needs while educating parents and caregivers about developmentally appropriate child-caregiver interactions. This program is currently funded in Berkeley and Charleston counties, and we have been able to leverage this work to receive additional funding from a national group to provide in-clinic services to further address these needs.

Recognition — the administrative team at the College of Nursing: Dean Linda Weglicki, Ph.D., R.N.; associate dean for practice Debbie Bryant, DNP, R.N.; Executive associate dean of academics, Gigi Smith, Ph.D., R.N., associate dean of faculty, Julie Barroso, Ph.D., R.N.;

Photo by Sarah Pack

MUSC nurses Jessica Vliet, left, and Sarah Parks, nurse manager, check in on Laura Hoover, right, and her husband, Michael Smoragiewicz.

Policy Continued from Page Ten

Health chief people officer Darrick Paul responded.

Organizations as large as MUSC sometimes have obsolete policies still on the books, Paul said. This is one example that would still be there if it weren't for Hoover speaking up.

"The moral of it is: If you think there's something we need to adopt to be more contemporary, particularly in the line of business we're in and the services we provide, raise your voice. Hopefully this is an example that if you raise your voice, we can change what's possible," Paul said.

Patrick J. Cawley, M.D., CEO of MUSC Health, said senior leaders immediately began the necessary work to update the policy, adding that Hoover exemplifies the expectation that employees of all levels lead and innovate.

Paul believes that MUSC should show

how strongly it believes in living donations through its employee leave policy, which will now be available to all 17,000 employees, no matter which entity they work for.

Although the policy on its own probably isn't enough to induce someone to donate, it at least shouldn't be a hindrance to donation, he said.

Hoover is happy to see the change in policy.

"I'm somebody who doesn't give up. If something's not right, I don't say, 'OK, fine, that's the way it is." Hoover said. "So I'm happy because I think other people may have given up and said, 'Oh, well, then I won't donate.""

As for herself, she said she never hesitated once she saw that initial Facebook post.

"I just thought, if that were my mom and she needed a kidney, I would just be devastated."

She's elated for her friend's mother-in-law, who got her new kidney and is doing great.

and associate dean of research, Teresa Kelechi, Ph.D., R.N. The true champions of this work are the community health workers: Lorena Cervantes, Cristina Holtz-Crosby, Abagail Santiago and Lixmar Herrera. Without their efforts and dedication this work would not be possible.

Bashar Badran, Ph.D., assistant professor, Department of Psychiatry and Behavioral Sciences and Dorothea Jenkins, M.D., professor of Pediatrics, Neonatology Division **Problem** – Rehabilitation after neonatal brain injury takes time and often requires weeks of intensive occupational and physical therapy even for the most basic of skills, such as learning to feed. What if we could use the plasticity of the developing brain to accelerate the speed of rehabilitation by boosting the brain's ability to learn movements critical to sucking and swallowing? Our solution is to pair noninvasive vagus nerve stimulation with oromotor rehabilitation to activate brain circuits involved in learning to feed, improve function after brain injury and avoid other solutions for infants, such as gastrostomy tube placement.

Impact — Over the past five years here at

MUSC, we have developed transcutaneous auricular vagus nerve stimulation (taVNS) as an exciting noninvasive form of VNS that does not require surgical implantation. We are now successfully using taVNS to develop oromotor function in babies born premature or with brain injury so that they can go home on full oral feeds and avoid direct stomach feedings with a gastrostomy tube. We are in the process of developing a SmartStim baby bottle that pairs this stimulation with the motor activity of feeding as a new medical device for pediatric neurorehabilitation.

Recognition - Mark George, M.D., and Steve Kautz, Ph.D., for their support in the development of innovative neuromodulation tools for brain injury and allowing us to move these into the realm of pediatric brain injury. MUSC NM4R and MUSC COBRE provided the financial support that was critical to launching these studies. The multidisciplinary study team involved hard work from the technicians and study coordinators from the Brain Stimulation Laboratory; Hunter Moss and Jens Jensen from MUSC's Center for Biomedical Imaging; and Patty Coker-Bolt, Ph.D., and her students in the College of Health Professionals, Division of Occupational Therapy.



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