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On the cover
Cynthia Hall, breast cancer survivor and patient at Hollings Cancer Center
Our Mission to Cure Cancer

We’re excited at Hollings Cancer Center to launch our magazine, Hollings Horizons, to keep you abreast of the transformational developments happening here. It may sound ambitious, but our mission is to cure cancer. We are the only National Cancer Institute-Designated Cancer Center in South Carolina and, as such, feel deeply committed to being at the forefront of cancer research. This research is the driving force behind delivering medical advances to patients and their families as we translate those findings into the clinic.

Wanting to treat the patient and not just the disease, Hollings Cancer Center places quality of care as one of its top areas of focus. We want to address patients’ needs holistically. It’s one reason we were thrilled that MUSC Health was ranked in the top 25 in the country for cancer care by U.S. News and World Report.

In the following pages, you’ll see how we’re making advances in research and clinical care. We’re also making great strides through community outreach in this fight to beat cancer as we find ways to better deliver care to the medically underserved in the state.

You’ll also hear from some of our patients in these pages. There is hope and courage to be found in their stories. Take Cynthia Hall, for example, who used her diagnosis as a springboard to reinvent herself and to advocate for breast cancer screenings. And there’s Julian Smith, who despite battling a brain tumor, is applying what he’s learned from being a long-time director of the Cooper River Bridge Run to raise funds for glioblastoma research.

In the end, the fight against cancer is a battle best fought together. We are honored to serve in this community and look forward to what we can accomplish together.

Sincerely,

Gustavo Leone, Ph.D.
Director of Hollings Cancer Center

Follow us. MUSC Hollings MUSC Hollings Hollings Cancer Center
The Blood & Marrow Transplant (BMT) Program at the Medical University of South Carolina won Team of the Year.

Presented at Press Ganey’s 2018 National Client Conference in Orlando, Florida, the national award recognizes a team that demonstrates outstanding coordination and teamwork in pursuit of delivering safe, high-quality and compassionate care.

“Our BMT program is 30 years old, and this award just confirms my belief that it takes a generation for an organization to cultivate a culture of caring that produces this level of excellence,” says Robert K. Stuart, M.D., a hematologist-oncologist at Hollings Cancer Center and the BMT director. “Our success is based on people, not bricks and mortar.”

Michelle P. Hudspeth, M.D., director of the pediatric blood and marrow transplant program, says teamwork is at the core of what they do every day. “We have a true focus on the patient and our mission. This fuels us every day to keep pushing harder for the children and adults who are depending on us for their only chance of survival.”

Hollings celebrates MUSC Health ranking 24th in Cancer Care by U.S. News and World Report.

It is the culture of Hollings that makes this all achievable. Every single employee is focused on delivering the highest quality care in an environment that is patient focused. I’m super proud. It’s humbling to work at a place like this.

- Dr. David Mahvi
Chief of the Integrated Center of Clinical Excellence for Oncology

Tobacco Cessation

Quitting smoking or tobacco use is one of the most beneficial things you can do to prevent cancer and help improve treatment outcomes if you have cancer. Knowing you should quit and doing it are two separate things, which is why researchers at Hollings Cancer Center want to find ways to lessen what they call cessation fatigue.

“I don’t think this is just about addiction and smoking,” says researcher Matthew Carpenter. “This is about health behavior change. Think about anything that anybody tries to do that’s hard. It takes time. To say that you’re going to be 100 percent committed on every day of your life in that attempt is folly. It’s a process. It takes a toll on you. Now we can look at this as a process and quantify that fatigue over time and see how it matters.”

Check out our website for important cessation resources:
musc.co/tobacco-cessation
Hollings Cancer Center researcher Chanita Hughes-Halbert, Ph.D., delivered the 2018 American Association for Cancer Research Distinguished Lecture on the Science of Cancer Health Disparities. It recognizes an investigator whose novel and significant work has had or may have a far-reaching impact on the etiology, detection, diagnosis, treatment or prevention of cancer health disparities.

Hughes-Halbert addressed how social and psychological factors contribute to disparities and effective behavior and clinical changes that can promote health equity.

“This important award brings attention to the research and scholarship that is being conducted to enhance cancer equity in racial and ethnic minorities and individuals from other medically underserved groups,” she says.

Hughes-Halbert is the principal investigator and director of the Transdisciplinary Collaborative Center in Precision Medicine and Minority Men’s Health at Hollings Cancer Center.

**Boots On The Ground**  – That’s what it will take to get HPV vaccination rates up in the state, says Kathleen Cartmell, Ph.D., in a meeting with school nurses this past fall. She knows it will take a village of researchers, doctors, nurses, schools and parents to get the word out that the human papillomavirus causes many types of cancer and that there’s a very effective vaccine that can protect children from ever getting it.

The state is doing better raising its rates, with awareness efforts beginning to pay off. The state had the fourth highest increase in the nation last year, but the effort is far from over. “We still have a long way to go,” she says.

“The momentum we’re seeing in South Carolina is huge right now. We’ve learned we have to get people engaged and excited to make a difference.”

Cartmell says school nurses are powerful partners. “They are the ones in the school everyday. Everyone is coming together. It’s pretty amazing.”
Hidden Scar Breast Cancer Surgery allows surgeons to remove the cancerous tissue through a single incision made in an inconspicuous area, preserving the natural shape of the breast while reducing visible scarring. Surgical oncologist Andrea Abbott, M.D., at MUSC Hollings Cancer Center is one of only two Hidden Scar Breast Cancer Surgery trained surgeons in the region. Abbott says patients who undergo this approach – available for both lumpectomy and mastectomy procedures – experience optimal clinical and cosmetic outcomes and are at no higher risk of recurrence than patients who undergo any other surgical procedure.

“It’s really important to me that women know that when they have a surgery, they have options. That there are ways that we can minimize the scarring so that every day when they wake up, they don’t have to have a visible reminder of their breast cancer,” Abbott says.

Survivors’ Fit Club This program was launched in February 2016 in collaboration with the MUSC Wellness Center. It is a 10-week program for breast cancer survivors that focuses on exercise, nutrition and emotional wellness. The staff includes a registered dietitian, exercise physiologist, post-rehab exercise specialist, health coach, cognitive-behavioral therapy specialist and certified personal trainers – all available to participants interested in getting fit for life. Visit musc.co/fit-club for more information.
Julian Smith is familiar with racing. Just about all his life, he’s been in some kind of run for his life.

First, it was when he had rheumatic fever as a young boy at age 7. He lived near Hampton Park with his parents and three siblings. “The doctor told my father, ‘You need to get this boy in a running program.’ My father would take me out every morning to the park and say, ‘Get out.’ And he’d follow me around the park in the morning. That’s how I got going.”

The habit stuck. The Charleston native kept running while earning a business degree at Charleston Southern University, and he continued after graduating. He found it was a great way to de-stress and bond with friends. When the Cooper River Bridge Run first got started, a friend invited him to participate, and he was hooked.

One of Smith’s first longtime jobs was to serve as director of the Wellness Center at MUSC, a position he held for 18 years. As part of that job, he served on the board for the bridge run. He enjoyed being a part of it and helping it to be a success. Always one to travel and take on new challenges,

Smith was in Oregon for a wellness conference when he looked up and Mt. Rainier caught his eye.

Julian Smith finds comfort from his dogs Ginger and Rosie.
Julian Smith, a longtime MUSC employee, has had three bouts with four different types of cancer. He’s fighting back with a new fund for glioblastoma research.
“I felt so bad when I had thyroid cancer. I just kept fighting it. I’m a fighter, and I fought it the whole way.”

- Julian Smith

“I thought, ‘I’m hiking that thing,’ so I drove to Washington state and hiked up to the glacier. I walked around up there, and it was the most beautiful view.”

As he hiked down, his phone rang. It was his boss telling him he was going to be in charge of the bridge run as its director. Smith was thrilled. “I thought, ‘I can make that race great.’ I got involved right away and started making changes.”

Having recently retired from his role he’s held since 1994, Smith says it did more than just change his life. “It became my life. I traveled all over the country representing the bridge run.” Smith went to races and marathons all over the nation and world. He began landing sponsorships. “I had different businesses fighting to get on the T-shirt. I had a vision for it, and it all happened, and it made me more confident in myself as a business person. I met some of the most amazing people across the country. It’s just amazing the friendships I’ve made.”

And he’s so grateful for them because his health battles didn’t end with rheumatic fever. Smith got skin cancer on his face, which he was able to get successfully treated, but then came another brush with cancer. Twelve years ago, he began having strange symptoms and felt extremely fatigued.

A friend at dinner one night asked him what was wrong with him and insisted he go and get scanned. “I could barely get through a day at work. When I got home, I just wanted to sleep, and I had really bad night sweats. Even my eyeballs felt like they were sweating.”

He followed his friend’s advice and the scan revealed in 2006 that he had two nodules in his neck. He went to see Kathie Hermayer, M.D., an endocrinologist at MUSC, who performed his biopsies. He remembers exactly where he was when he got the call about the results, on Broad Street in Charleston at the bank.

“Where are you?” she asks. Smith tells her.

“When you get done, will you do me a favor and get in your car and drive straight to Hollings Cancer Center? You have an appointment with Dr. Day,” she says referring to surgeon Terry Day, the director of the head and neck tumor program at Hollings Cancer Center. Smith, who knew his father and aunt both had thyroid cancer, was prepared to hear some bad news. What he didn’t expect to find out, though, was that he had two kinds of thyroid cancer, follicular and papillary.

Day wanted to do surgery the next day. Smith pushed back because the bridge run was the next week. They compromised. Smith, who had stage 2 thyroid cancer, had the surgery, but then showed up for the bridge run with a big bandage on his neck. He followed up the surgery with radioactive iodine treatment.
New Challenge

“I felt so bad when I had thyroid cancer. I just kept fighting it. I’m a fighter, and I fought it the whole way. I was losing so much weight. I lost 70 pounds. Some days I’d eat 12 yogurts just to gain weight.”

As Smith recalls the nightmare, he shares how hard it was on his family. Close to his siblings and mother, who’s now 92, he remembers he hated putting them through the stress of the illness.

That’s why when he started having odd symptoms again this year, he kept it to himself at first. He noticed he was having dizzy spells and would stagger when he walked causing some people to think he was drinking.

“I would stand up, and the room would start spinning like a top. I was holding on to whatever I could hold onto.” His internist insisted he get an MRI.

Doctors found a lesion on his brain and swelling inside his skull. He was referred to neurosurgeon Alex Vandergrift and neuro-oncologist David Cachia, who explained he had a type of brain tumor called glioblastoma, the same type that Sen. John McCain had. Smith’s doctors worked on developing a treatment plan for him.
For a while, Smith kept the news to himself. He struggled to wrap his mind around the diagnosis. He thought of the bridge run that was just two months away.

“I was devastated when I found out the second (actually third) time that I had cancer,” he says.

He began bargaining and somewhat joking with his doctors.

“I told them, ‘This is my money maker – this face. This is what has made me money. I’ve taken very good care of this body, and the thought of taking chemo kills me.’ I told them, ‘No, you can’t do this to me.’”

Smith decided to have his surgery May 4 and opted for an aggressive treatment plan. He had six weeks of radiation together with chemotherapy. He also opted for treatment using the Optune device. This is a cap he wears on his head that generates an alternating electrical field that stops or slows the growth of cancer cells.

Smith says he’s been so touched by the outpouring of support from friends and his care team at Hollings, including his radiation oncologist Joseph Jenrette. “Dr. Jenrette and his team have been so awesome. I saw them every day for a while, and they became like part of my family. Dr. Jenrette and Dr. Cachia helped me through a really rough time.”

It’s one reason he has created a glioblastoma fund for cancer research that has raised over $90,000 as of January 2019. The idea came from his friend Pam Hartley, who does marketing for the bridge run. Knowing that she’s the queen of positive, Smith told her that he wanted to turn his condition from a negative to a positive. She suggested the idea of a legacy film and hosting an event to raise funds to fight this type of cancer.

Smith loved the idea and wanted it to be a way to spotlight and raise funds for glioblastoma research. And, in true bridge run style, he decided there had to be a T-shirt. It sports the slogan: Never Quit Killing It — Cancer.

“I don’t want this to be about me. I want it to be about glioblastoma and finding a cure. I want it to be about how this horrible thing comes to people.”
Janis Newton, director of MUSC’s Wellness Center, says she’s not surprised at all that Smith wanted to start this fund. She’s known Smith 30 years, and it fits his generous heart. He’s had an amazing impact on the bridge run and is known by many as the “father of the bridge run,” making it one of the largest and most successful 10Ks in the country, she says. What she loves most about him, though, is how he never loses focus on the people he serves. “Julian is generous, compassionate, authentic and honest, innovative, reliable and a beautiful soul. He’s unique,” she says.

“Julian is a fighter and will beat this cancer. He immediately took on the most positive mindset, has enormous faith and a willingness to share his story and give back by raising money. He has kept a special connection to his many friends and close family and has made this community a better place.”

A case in point is the health and wellness expo he started years ago as part of the bridge run.

“He re-invented it the last two years, and it has flourished into a huge community wellness resource. The bridge run is the biggest event contributor to community health and wellness. Anyone, any age can participate, and the focus it creates on preparation and year-round fitness is invaluable to Charleston.”

Newton says she treasures the time they spend together.

“Julian is the most huggable, loveable and fun person ever. He always brings a smile to my face and is the best person to have a laugh attack with. Julian is not only generous with financial donations and fundraising, but he is generous in his heart and giving of himself to others. I don’t know anyone else like Julian Smith, and I am proud and honored to have him as a friend.”

Smith, 67, says the fundraising event held in 2018 was a success. He was touched by all his friends opening up their hearts. “I want to help find a cure for it. I’m a fighter. I have so many good friends. Every day I have friends checking on me, saying they are praying for me and saying the sweetest things. All of that helps.” It helps him stay committed to the fight.

“I kicked cancer once before. If anybody can do it, I can. I have a great positive attitude about it. I’ve read the statistics, and it’s not good, but I’m going to do everything I can. I’m going to give it a good run.”

Glioblastoma Facts

- Glioblastomas represent about 15% of all primary brain tumors.
- About 50% of gliomas are glioblastomas with 12,120 new cases predicted in the nation in 2018.
- They are most common in adults ages 45-65 and affect more men than women.

Source: American Brain Tumor Association

Find out more about the Brain and Spine Tumor Program at musc.co/brain-spine
Everyone had ideals in high school about changing the world – how we can make it a better place. I still have those ideals.

-Dr. Gustavo Leone
When Gustavo Leone, Ph.D., wakes in the morning, the first thought often to cross his mind is, did someone cure cancer today?

The second thought to occur: “Why didn’t I do it?” he says, laughing.

It’s a question that drives him as a researcher and director of Hollings Cancer Center, the state’s only National Cancer Institute-Designated Cancer Center. Since becoming director of the center in March 2017, Leone has focused on recruiting researchers and establishing transdisciplinary teams of clinicians and scientists who can feed off each other’s brain power.

Logistically, this can be challenging as more than 100 Hollings Cancer Center researchers work across 20 academic departments at MUSC, all dedicated to advancing cancer care. The research and insights gained in the lab then need to be translated into the clinic as fast as possible to help the more than 5,000 patients being treated annually at the center. Speeding up this process is one of the center’s top strategic goals.

The cancer center is on a good trajectory, with its clinical arm winning an impressive accolade. MUSC Health was ranked in the top 25 in the nation for cancer care by U.S. News and World Report in 2018. It’s a ranking that brings a smile to his face.

“This is absolutely a tremendous achievement on one hand. On the other hand, I’m not really that surprised. We have fantastic nurses, doctors, oncologists and surgeons who all come together with the same goal and that’s to serve the patient in the best possible way.”

Leone credits David Mahvi, a surgical oncologist who also serves as chief of the Integrated Center of Clinical Excellence for oncology, for leading the charge in helping the clinical area earn this achievement. “It speaks to the quality of our clinical care and is a recognition of what they do every day,” Leone says. “People at the cancer center should be very proud of that, and people outside the center can know they have a place that’s going to take care of them.”

Leone and Mahvi both are relatively new to Hollings, having joined the cancer
center within a year of each other. “That, together with a number of new recruits and the existing faculty here, has really changed this place into a positive, forward-looking cancer center that is looking at cures — we’re talking about that now — and prevention. That’s definitely on the horizon and that’s good news for the people of South Carolina.”

One case in point: efforts to increase vaccination rates for HPV, the human papillomavirus, which can cause a variety of cancers, including cervical, and head and neck. While it’s an ambitious goal to aim to cure cancer, if it can be prevented in the first place, that’s even better, he says.

In South Carolina, HPV causes more than 580 new cases of cancer each year, and the state has been slow in getting its teens up to the national levels of HPV vaccination rates. Vaccination has been shown to be highly effective in preventing many types of cancer.

“Anything we can do will have a major impact,” Leone says of raising awareness. “HPV vaccination will save thousands of lives in the state. We have to get the word out to the community.” Engaging the community is critical to Hollings Cancer Center’s effectiveness in the state. South Carolina bears a disproportionate burden of cancer mortality. For all cancers combined, the state ranks 14th in the nation with the highest cancer death rates, according to the National Cancer Institute. Part of the issue is access to care. More than 75 percent of the people in this state live in rural areas. All 46 counties contain areas designated as medically underserved.

No stranger to poverty himself, Leone knows community engagement is one key to finding solutions. “When things get tough or there’s poverty or hardship, people just need to come together. That’s the only way things get done. We need to find ways to inspire people to work together more. We need to use the resources we have to ignite what’s ignitable to have people work together.”

**THE EARLY DAYS**

Seeing the sophisticated décor of Leone’s historic home on Pitt Street in Charleston, it’s hard to imagine the scrappy boy who grew up on the outskirts of Montevideo, the capital city of Uruguay. Living in a low-income area just a few blocks from a ghetto, Leone shared the one-bedroom, 800 square-foot house with his parents, brother and sister. The floor was a mix of packed dirt and cement, and the only interior door was to the bathroom.

His mom was a seamstress and his father, a computer operator. He got along well with his siblings, mostly because it was the only choice.

“My mom wouldn’t have it. We’d get the strap – well, not the strap, but she’d take her sandals off and chase us around.” Though the family didn’t have much, it didn’t matter. “I loved my childhood. My childhood was awesome.”

He was mostly outdoors, playing soccer until he and his friends wore the ball out, and then they would switch to wooden tops and marbles. “We were very good at marbles. We used to play for real. You played to win, and then you’d keep the marbles. It was vicious.”

Then there was a season for kites. “My dad would always make me a kite – homemade with bamboo. You’d buy the thin, thin paper, and I used to pick the colors, and you folded it with glue that we made with water and flour. It works pretty well unless it rains.”

When he was around 11 years old, the family made a dramatic move to be near family in Montreal, Canada. There he got to experience the thrill of snow. They still lived in a low-income area, but it was a move up.

“The apartment had carpet, so we thought that was pretty spectacular. It was a two-bedroom apartment,” he says. “Coming out of the airport, it was like your eyeballs are coming out of their sockets because of the lights and the complex, sophisticated roads, and the cars seemed like they came out of something like “The Jetsons” – very modern. I had never seen anything like that.”
He didn’t speak English and looked different, so bullying was a problem. “I got into fights almost every day as a child.”

His younger brother, Sergio Leone, remembers how well his brother stood up for him. He’s always had a soft spot for the underdog. Sergio says the one word that best describes Gustavo: passionate.

“When he thinks of something, he just does it. He goes for it. He looked out after me. He always thought of what the right thing was to do,” Sergio says. “He’s always been a good brother to me, and I admire him for all his accomplishments. He’s earned them.”

Those accomplishments included earning money while in school to help the family. Their father died of colon cancer when Leone was 15, so he had to find a way to make more money.

Moving beyond doing yard work and landscaping for a company, he got into refurbishing homes. He remembers getting home at midnight or 1 a.m. He eventually ended up running his own business and hiring others to do projects, earning about $600 to $800 a month.

When the family moved to Calgary, he did a variety of jobs from sandblasting to working in a bottle depot factory. Whatever he did, he did with gusto.

His brother recalls vacationing in Tofino in British Columbia when they noticed a fish thrashing about, trapped by a sandbar. Being teen boys, of course, they decided to catch it. They were running around crazily, catching it, only to have it slide right back out of their hands. Leone paused and suggested a new strategy. They would herd it into a corner, and then he would try a two-handed hold, neck and tail, to see if that worked better.

Soaking wet, Leone took another dive and emerged victorious – arms raised high with a coho salmon glistening in his hands.

“He throws it on the beach and everyone’s clapping,” Sergio says, smiling. “It was an awesome dinner that night.”

**THE RISK TAKER**

Moving out of his family’s home at 17, Leone felt ready to start his own path. He eventually enrolled in the local university but did horribly. Dropping out, he and his girlfriend Karen decided to hit the road and see the world. “I just wanted to have fun and experience the world.”

He went to Vancouver and did odd jobs, including cooking, as he saved up money to get a motorcycle. He also continued doing martial arts, which he had started at age 13, earning his black belt.

“I figured I should really learn how to fight – not just brawl with one or two people – but really learn how to fight.”

After nine months, he and Karen had saved up enough to get the motorcycle. They went across Canada to her parents’ home in Manitoba to announce they were going on a 14-month road trip across America all the way down to the tip of South America.

They cruised down North America, through the rugged badlands of South Dakota, past the breathtaking wonders of the Grand Canyon and then on to the milder climate of San Diego. There were obstacles, including a hurricane and a bad road accident in Mexico City, where they had to stop to recuperate. They camped out in various places, from beaches to rural farmland, and bathed in rivers.

The couple made it through Peru, Chile and Argentina, and back up through Brazil, managing to squeeze in a crocodile hunting boat expedition on the Amazon River. All they had with them were a few items of clothing, and the whole trip cost just $2,800. The experience profoundly shaped him.

“I learned that everyone is the same in every country. They have the same worries,” he says, adding that the main difference that stood out was between city dwellers and rural people. “The impression was that people are generally beautiful. And I learned that we can go anywhere in the world and be comfortable without Google or maps or plans.”

The hardest challenge for Leone came when he returned to Calgary and had to adjust to a “normal” life. He and Karen married and would go on to have two children during their 14 years together. Leone ran a martial arts school, which kept him in shape and focused when he returned to the University of Calgary. This time he did better and went on to graduate school, where he discovered a new passion.

“I got a call on one Christmas break from a virologist, Dr. Lee, who had some money to support me for the summer. That was awesome. After three weeks of being there, I was cloning genes, and I said, ‘This is what I want to do. This is for me.’”
The Cancer Hook

Leone earned his doctoral degree from the University of Calgary and completed a postdoctoral fellowship at Duke University in 1998. “I worked like crazy. I loved the science there. I loved my mentor, Dr. Joseph Nevins. It’s then that I had made the connection between viruses and the mechanisms of cancer. Breakthroughs were happening, and I knew I wanted to work in this area. That was a lot of fun.”

An opportunity arose at The Ohio State University (OSU) as an assistant professor at OSU’s James Comprehensive Cancer Center, a National Cancer Institute-Designated Cancer Center. There was a pioneering atmosphere there because the cancer center had just started recruiting 12 researchers to strengthen its program and start changing the landscape. Leone was one of those recruits.

“It was a big group doing a lot of good science. There was a lot of good camaraderie. We made it into a very good cancer center.”

Hollings Cancer Center researcher Michael Ostrowski, Ph.D., met Leone in 1999 when he also was at OSU. He was involved in Leone’s recruitment to Ohio State following his postdoctoral studies at Duke.

“He is an internationally recognized expert in two fields, cell cycle research and tumor microenvironment,” Ostrowski says. “He is an outstanding colleague and collaborator to many investigators, including myself. His work is recognized as being highly innovative. He is at the cutting edge of discovery research. He is also known as an outstanding mentor.”

They worked on many projects together, bonding. Ostrowski says he found him to be trustworthy, dependable and compassionate, all the characteristics important in a friendship.

“We had colleagues who were a married couple at Ohio State. The wife developed breast cancer and survived. The husband subsequently developed a brain tumor and did not. Gustavo was a true friend to both of them through the ordeal, providing important support for both through the difficult times.”

He also remembers how Leone would host lab meetings - pizza sessions every other Friday evening for more than 20 Ohio State undergraduate students. “It showed his dedication as a mentor and his incredible energy.”

ON A ROLL

In many ways, Leone hasn’t changed much from his early years. He doesn’t own a car, he only just recently bought a TV, and he still likes to get some of his clothes from a secondhand store. Other character traits he still carries with him: loving a fight for the underdog and welcoming risks for a good cause.

That’s part of what drew him to Hollings Cancer Center in 2017. Given that the cancer center is the state’s only NCI-Designated Cancer Center, he knew any initiatives he could accomplish would make a big impact.

“Everyone had ideals in high school about changing the world – how we can make it a better place. I still have those ideals. Being the director is an amazing position to be in that allows us to have a positive impact on the world,” he says.

He tries to remain as involved as he can in research despite his larger administrative role. “That for me is energizing. On Tuesday, I can forget about everything else and totally immerse myself in the lab. It feels so good. In the end, I know that science will rule and I have to do more of that kind of deep thinking because it also influences how I make decisions at the cancer center.”

A leading researcher in the field of transcription factors – figuring out how proteins that regulate gene expression work - Leone says it lays essential groundwork for other studies. “These experiments need to be done – otherwise we’re walking on eggshells for the next 10 to 15 years. Researchers think they know what these proteins do. I want to know when and where they are expressed in the entire body throughout development. It’s a framework for everything else.”

Another important goal for him is to establish a structural biology program with cryo-electron microscopy to help to attract and retain top-tier researchers. The technology can produce accurate, detailed 3-D models of intricate biological structures at the sub-cellular...
and molecular scales. The models can reveal interactions that were impossible to visualize previously, an ability that is changing the whole field of research in a profound way, he says.

Leone likes to push the envelope. It’s one reason he plans to adopt a cancer fundraising event that’s been remarkably successful at OSU.

Hollings Cancer Center will host LOWVELO in November 2019. The outdoor bike ride, modeled on OSU’s Pelotonia, will offer cyclists three routes: a 25, 50 or 100-mile course. The goal is to land sponsorships to cover the cost of the ride so 100 percent of all rider-raised funds goes directly to support cancer research. The goal the first year is to have 1,000 riders raise $1.5 million. In five years, the goal is 5,000 to 6,000 riders raising $10 million.

Leone admits it’s ambitious. “It can work. And it lets the public know there is a cancer center, and all the amazing work happening here. It’s worth taking the risk.”

What Leone really loves about the ride is that it allows the community to partner with the cancer center, creating a culture of wellness as everyone bonds in the mission to cure cancer. Leone recently spoke at the 2018 LevelUp Convocation of the seventh district of the African-Methodist-Episcopal Church, celebrating a partnership with the group and the cancer center.

The center will be offering its MOVENUP program that trains community health educators about cancer prevention, screening and treatment options, and the vital role clinical trials play in developing new, more effective approaches to prevent, diagnose and treat cancer. It dovetails perfectly with the center’s goals to reduce health disparities in the state and to better reach medically underserved areas. A positive spinoff is that many of the churches are interested in sponsoring riders for LOWVELO and want to learn more about healthier lifestyles. It’s a win-win situation.

“This kind of outreach allows us to do something bigger than we can do on our own,” he says.

“By reaching out to communities and asking them to ride and get healthy, you can talk about things that matter to them - nutrition, health, exercise, cancer prevention and screening. Some will want to participate in clinical trials because of this. We’re building relationships and developing trust.”

Though the bike ride offers an impressive athletic challenge for the longer courses, it’s really not about bragging rights. It’s about the community drawing together to be part of the solution to curing cancer, and the cancer center doing more to educate the public about what they can do to prevent cancer and have access to the best treatments.

This is no small feat. Cancer is among the leading causes of death worldwide. In 2018, an estimated 1.7 million new cases of cancer were diagnosed in the nation. Worldwide, the number of new cancer cases per year is expected to rise to 23.6 million by 2030, according to the National Institutes of Health.

That’s not OK to Leone, who would like to see cancer affect fewer lives.

“It’s something we all have a common interest in and that, in and of itself, is beautiful. I like hard work, and I like sweating. I like the fact that you get there, and if you get there with someone else, it’s really nice. It’s a challenge, but it’s doable, and it’s going to help us accomplish great things – individually and as a group.”

Dr. Leone relaxes at his home on Pitt Street, where he often can be found cooking, a favorite pastime.
At the time I was thinking, ‘We shouldn’t be OK with breast cancer – not at 45 – it’s not all right. It’s not OK whatever is causing it.

- Cynthia Hall
Cynthia Hall had prepped for the three-day, 12-mile grueling hike in India to the Gaumukh Glacier, perched 13,000 feet high in the Garhwal Himalayan region. She would be trekking past sacred shrines, breathtaking peaks and bleating blue mountain goats.

She had worked out, prepped her pack, stowed her special painted rock and read up on water quality and the geology of the region.

What she hadn’t read up about, though, was breast cancer, a diagnosis she got in May, about a month before the trip.

“I was working out and getting in shape for the trip until I found out that I had cancer,” she said. “I got really depressed and quit working out, and then I had surgery. I was really worried I wouldn’t make it to the glacier. Some of our students do not,” she said of the travel abroad trip she was co-teaching at the College of Charleston.

She wrestled with whether she should go as well as how to handle the shock of the diagnosis. Hall, 45, also found she was angry.

“I think the most important thing was letting myself feel sorry for myself. Everyone kept reassuring me that everything would be all right, but it’s scary. I didn’t want to hear that everything was going to be OK. At the time I was thinking, ‘We shouldn’t be OK with breast cancer – not at 45 – it’s not all right. It’s not OK whatever is causing it.’”

Because Hall has a family history of breast cancer, she fortunately took getting her annual mammograms seriously. Another risk factor is that she has dense breast tissue, which means more of the breast is made up of dense glandular and fibrous tissues that can make it hard to see tumors on mammograms. Hall jokes that she’s such a classic case that a few years ago she was asked if her imaging results could be used to illustrate a medical article about dense breasts.

The problem with dense breasts is that it can be difficult for women with this type of tissue to remain vigilant as they often feel lumps in their breasts. In this case, Hall hadn’t felt anything so when she was called back in after her mammogram to get a biopsy at Hollings Cancer Center, it surprised her. When she found out it was cancer, she freaked out, she says.

“I thought I was going to die. My grandmother and aunt had had breast cancer and survived. I had no reason to think that, but you just can’t help it.”
Forging Ahead

Having a great support network of friends and family, Hall let her mom and sister come with her on her visit to see surgeon Andrea Abbott at Hollings Cancer Center. The one condition was that no one was allowed to cry, whatever they found out. Anxious before the visit, all kinds of scenarios ran through her head.

“Dr. Abbott was so positive. She said this is what’s going to happen, and this is what we’re going to hope for. After meeting her, I felt so much better.”

What they were hoping for came true. Because of her mammogram, the invasive ductal carcinoma was caught early, and Abbott recommended surgery, a lumpectomy, May 12. Hall began reconsidering her India trip. Maybe she could still go June 3 and be able to keep up.

As a geologist familiar with the powerful, tectonic changes shaping Earth, she felt a similar upheaval happening inside her. “You’re going about your life with no idea of all that’s going on beneath the surface,” she says. “Your thought processes change when you know you have cancer. You feel like you have an alien inside you, and then that’s at the forefront of your mind.”

Hall talked with her doctor about what other forces were at work in her life, other than genetics, to cause her to have cancer. She decided to improve her diet, increase her physical activity level and decrease her stress. She would join Survivors’ Fit Club, a wellness program for breast cancer survivors offered by MUSC Wellness Center and Hollings Cancer Center. She made it a goal to worry less. And she decided to risk going to India.

About this time, a friend sent her a job announcement relating to NASA. Though she loved her College of Charleston teaching job, she welcomed a new challenge, and the job would get her back closer to her roots. She had earned her masters degree at UCLA in the use of satellite imagery to assess data and worked at the Jet Propulsion Lab for about a decade before moving home to Charleston to be closer to family.

This new job with Science Systems and Applications Inc. as a contractor with the NASA Goddard Space Flight Center involved being a community coordinator for all the Earth science data that NASA collects. “I decided, now is the time. What does it hurt to try and see if they allow teleworking?” she said, adding that the interview time was conflicting with her India travel plans.
I can’t stress the importance enough for women to go do routine procedures, like a mammogram, so we can catch things early.

- Cynthia Hall

To schedule your annual mammogram at one of our three locations, please contact us at 843-792-8439 or schedule online at musc.co/hcc-mammogram.
“I am laid back and passive, but now I’ve seen that change in me too. I called about the job and said, ‘I’m going to India, but I’d like to do this job interview, too.’”

While she was at it, she decided to move to a new house as well. “Why not?” she asks, laughing.

“I feel I’m in a totally different place. It’s not just because of the cancer, but it put a lot of things in motion, like the shifting of priorities. And I’m putting myself in a better place.”

Hall trained to be able to handle the hikes on her trip to India.

**Breast Cancer Facts**

1 in 8 women in the US will be diagnosed with breast cancer in her lifetime.

Breast cancer is the 2nd leading cause of cancer death among women.

Although breast cancer in men is rare, an estimated 2,470 men will be diagnosed with breast cancer in 2018.

Source: National Breast Cancer Foundation, INC.

Facing the Glacier

When Hall left on her trip, she knew she would face radiation treatment when she returned home. She also would be taking a new job.

What she still didn’t know was if a bunch of 20-year-old college “kids” would leave her in the dust.

“It was surreal being there. It was an experience that I wasn’t sure I would ever get to experience again. The mountains were just so massive, and they’re still forming and growing. When I started to see the glacier, that’s when I started to cry. The students were like ‘what is wrong with you?’ And I was like, ‘I made it! I made it!’

“I had had all these major life-changing events and challenges. And I made it at 45. I just had surgery. I’m a little overweight, and I just hiked and kept up with 10, 25-year-old students.”

Hall says she’s settling into all her new roles now, including being a cancer awareness advocate. Many of her friends have gotten mammograms because she’s shared her experience. She’s also encouraging others to support funding for cancer research and joining in more of those events. Her story is spreading far and wide.

She took a special painted rock with her that her young cousin had painted for her. “I thought, I’m going to take this with me and leave it there. It was like leaving a little piece of me there.”

Two days later, someone found it and posted the picture on Facebook. “I went online and told my story to the Indian person who found it. It was just really cool.”

Even though the trip is over, she is forever changed, she says.

“You feel this amazing sense of accomplishment. When I left that rock there, there was a heart on it, and I felt a connection that I left something important in me there. I was leaving a marker of my accomplishment behind.”
When I left that rock there, there was a heart on it, and I felt a connection that I left something important in me there.

- Cynthia Hall
Though George Hyams is a sucker for an exotic plant, he has thick skin. He’d have to, since he was one of the first football players at Clemson University to major in horticulture.

Asked if he got grief as a football player choosing that kind of major, he nods and laughs. After a pause, he adds, “Not now.”

Not now is right since he runs Hyams Garden and Accent Store, a successful nursery on James Island often swamped by gardeners roaming aisles of plants and accessories. Hyams has owned the business since the early ’80s and doesn’t regret the choice. His father, a pathologist, was a doctor, and Hyams did consider medicine. “I don’t know why I didn’t get his brains, but I got his looks,” he says, grinning. He also got his mother’s love of gardening and being outdoors.
George Hyams loves getting outdoors at Hyams Garden Center.
In 2015, Hyams noticed a weird lump on the side of his throat. He finally decided to get it checked out. “I had a big tumor inside my throat, but what I was feeling were my lymph nodes. It had spread to my lymph nodes. It had been there for a while, but I just didn’t know. I didn’t want to know.”

The diagnosis was throat cancer, which he later found out was related to the human papillomavirus (HPV). An estimated 70 percent of cancers in the oropharynx (which includes the tonsils, soft palate and base of the tongue) are linked to HPV. Hyams learned he would have to have two surgeries. “Once they find a cancer, they move pretty darn fast.”

The first step was to undergo robotic surgery to remove the tumor. “It was a little scary, but it cut a perfect tumor hole in my throat – just like an ice cream scoop – and popped that sucker right out of there. In your throat is the worst place to have something messed with. I had to have a feeding tube for a while.”

His oncology surgeon was Terry Day, a specialist in head and neck cancers at Hollings Cancer Center at MUSC Health. He also worked with medical oncologist Paul O’Brien and radiation oncologist Anand Sharma.

“What a great group to work with. Dr. Day used to call me and text me from wherever he was through the whole deal – that was just very nice,” he says. “They are some of the best in the nation, and it’s nice to have them in our backyard. I was able to stay near my business, family, friends and home.”

That was important as his cancer required several procedures. Doctors found they needed to remove 12 lymph nodes. “Luckily, they didn’t tell me I had stage 4 cancer until it was over. Just the cancer word alone is enough to scare you to death but to learn you’re in the worst stage you can be in, that would have been even scarier.”

Then Hyams faced 36 radiation treatments and three rounds of chemotherapy. The worst part was not being able to swallow and the feeding tube he had to have, he says. “I lost 50 pounds, and I’ve only regained 30. It’s still hard to eat. It’s all good because I can learn to swallow and eat soup. That’s not a big deal now. My problem was my wife was cooking all this great stuff for me – the pastas and all. She’s gaining weight, and I’m not.”

Hyams, now 63 and back to his thriving gardening business, says he took the cancer diagnosis in stride.

“I never said why me, and I never worried about not recovering. I just said, ‘Let’s do it. Let’s get it over with because I have a lot to do.’ I was able to come to work during treatment and kind of keep an eye on things. I wasn’t able to stay that long.”

Hyams finished his treatment by October, 2015. It destroyed his thyroid, so he doesn’t have any saliva. He’s gotten his energy back and enjoys his trimmer build. “It’s a lot less wear and tear on my joints losing that weight.”

DID YOU KNOW?

• Alcohol and tobacco are major risk factors for cancers of the head and neck.

• About 70% of cancers in the oropharynx (which includes the tonsils, soft palate and base of the tongue) are linked to HPV.

• It is estimated that about 3,400 new cases of HPV-associated oropharyngeal cancers are diagnosed in women and about 14,800 are diagnosed in men each year in the United States.*

*These numbers are based on cancers in specific areas of the oropharynx and do not include cancers in all areas of the head and neck or oral cavity.

Sources: Centers for Disease Control and Prevention, Hollings Cancer Center
He doesn’t mind sharing his story because he wants to raise awareness about head and neck cancers and the importance of the HPV vaccines for pre-adolescents. Oddly, three of his Clemson classmates, including two football players, had the same type of cancer just before he got his diagnosis. “It was nice for them to be able to call and tell me what was going on and what to expect. It was good to hear they were doing well.”

Hyams, a grandfather of three, was surprised to find out his cancer was related to the HPV. “I think everyone has been exposed to it. I’ve made sure all my children and grandchildren have gotten what vaccines they’ve needed to get. I wouldn’t wish this on anybody. They’re crazy not to get it. If we had known then what we know now, I would have.”

Another lesson he learned was how important it was to have a good attitude. His radiation oncologist made him take advantage of the psychological consultation services the cancer center has, especially given his weight loss. “I think it helped. I knew I was going to get well, and I just had to hang in there,” he says.

It’s another reason he shares his story so he can encourage others. “Once you’ve had cancer, there’s no holding back. You don’t play. There’s so many people who have had cancer, you don’t have to hold back. They know, and you know what it’s like. It’s a shame you have to go through that to realize certain things about life.”

Having cancer has changed him, he reflects.

“Every day is great. I used to get stressed out with 15 employees, and all the crap that goes with that, but I just don’t worry about that anymore. There are so many things that you have no control over at all that you worry so much about.”

The one exception is his yard.

“There’s a lot of pressure on me in the neighborhood to have a nice yard,” he says, grinning.
Terry Day, an MUSC Health surgeon who specializes in head and neck cancers at Hollings Cancer Center, is president of the international Head and Neck Cancer Alliance, Inc. The group focuses on advocacy and survivorship, providing a free screening that’s held worldwide every year during the oral, head and neck cancer awareness week (OHANCAW.com) in April.

Here, he explores why the incidence of head and neck cancers is rising and what people should know about their risks. It is estimated that in the U.S. about 3,400 new cases of HPV-associated oropharyngeal cancers are diagnosed in women each year and 14,800 in men, which makes it more common than cervical cancer.

I’m glad to see more celebrities are coming forward to recommend early diagnosis – Michael Douglas, Jim Kelly. They are helping spread the word for early detection.

What role does HPV or the human papillomavirus play? In the last decade, HPV’s connection to the back of the tongue and tonsil cancers really has emerged. Surprisingly, research shows throat cancer from HPV has surpassed cervical cancer in incidence in the U.S.

People ask me, ‘How do I find out if I have HPV cancer in my throat?’ There’s not a great test yet that is FDA-approved to detect HPV in the throat. We do know that it’s occurring more frequently in younger males, Caucasians, than it used to and in those who don’t smoke. The earliest signs and symptoms include a swelling or enlarged lymph node or cyst in the neck or a constant sore throat that doesn’t go away. I’ve seen teens and young people in their 20s diagnosed with these cancers.

My top advice: If they have a spot in the mouth or throat, lump in the neck or sore throat that isn’t going away, they should be checked immediately.

What do you wish people knew about the HPV vaccine? It’s important for people to get the vaccination before they are exposed to the virus, so that’s why it’s recommended for boys and girls and was recently FDA-approved for adults up to age 45. It’s clearly established the vaccination can prevent HPV in the body, and therefore prevent HPV that causes throat cancer. Unfortunately, South Carolina ranks near the bottom in HPV vaccination rates. I’m not sure why that is, but I feel it’s important for parents to go to their pediatrician, talk about the

What are head and neck cancers? Cancers can occur almost everywhere in the head and neck including the skin, mouth, throat, voice box, thyroid gland, parotid gland and other areas. However, the type that has recently emerged and is seeing a lot of publicity is the HPV throat cancers.

Why are we hearing more about head and neck cancers? They are becoming much more popular in news and media because it’s considered to be an epidemic in the U.S., so people are more aware of it, and many celebrities have been diagnosed and are becoming advocates for early diagnosis and HPV vaccination. Of course, we would like to see the cancers at an early stage when they are small and more curable. When we treat them later — at stage 3 or 4 — the treatment becomes more complicated, and there can be more side effects.

Dr. Terry Day | Head and Neck Cancer
An emerging men’s health epidemic
Why is this cancer often misdiagnosed or caught late?
The important thing to know is this is so new in the U.S. and South Carolina that many physicians and dentists didn’t receive this training in school. Often, we are educating doctors as we are educating the public. Anyone who has a lump in the neck, red or white spot, sore throat or trouble swallowing that is consistent should see a specialist. This is something that is commonly misdiagnosed. It is important to have your family physician or dentist refer you to a specialist to do an exam and a biopsy.

Who is particularly at risk?
Nearly all sexually active people will get HPV at some time in their life if they don’t get the HPV vaccine, so everyone should be aware of the risk. Males between 40 and 60 should be particularly aware since head and neck cancers affect more men than women and are more common with older age. Men also tend to ignore symptoms and wait later to seek treatment.

What’s the prognosis for those who do get head and neck cancers?
If you are diagnosed with an HPV-related throat cancer, overall there’s a much better cure rate than other throat cancers. It’s important to seek treatment at a cancer center with a multidisciplinary team. Most patients should have a team that includes a head and neck surgeon along with radiation and medical oncologists, speech/swallowing therapists, and we also have two of the top maxillofacial prosthodontic specialists in the U.S. The goal is to have the best quality of life after the cancer is cured. Having the newest technology also is important, and our minimally invasive robotic surgery allows patients to have the tumor removed without incisions on the face or neck. Now it can all be done through the mouth without any incision of the skin, so the patient often goes home in one to two days, not the seven to 10 days that it used to be. We have four head and neck cancer surgeons specially trained in robotic surgery.

Our head and neck cancer team is unique. We have a multidisciplinary team with specialists led by a top nursing and nurse practitioner team who have depth in fields that you can’t find in other places in the country. It’s likely why we get referrals from all over the country and internationally because we have no gaps in expertise. We have two of the top maxillofacial prosthodontic specialists, and we can make artificial body parts (eyes, ears, nose, mouth) via 3-D printing to improve outcomes and cosmetic results in patients. We also have a head and neck and facial plastic surgery team allowing reconstruction of the face, jaw, tongue and throat with tissue transplants to replace areas that need to be removed due to cancer. Another exciting development is immunotherapy, which can now be used to boost the patient’s immune system to fight the cancer cells to help improve survival rates and outcomes. We have several clinical trials open at Hollings Cancer Center related to mouth and throat cancers that are not available at other cancer centers, including one that is looking at reducing side effects by decreasing the amount of surgery, chemotherapy or radiation that’s needed. Dr. Evan Graboyes’ research focuses on improving patient outcomes in both quality of life and cancer cure.

Why are these advances so important?
In the past, if you had head and neck cancer, most people would never go out in public because it affects the way you look, the way you breathe, eat, drink – even the way you talk. Some people weren’t able to do those normal functions after treatment. Now, with advances, almost everyone is able to regain those functions post-treatment.

As you can imagine, if you have to have parts of your face or mouth or throat removed, it’s going to affect every single day of your life, and it will affect the way you look.

What drew you to this field?
I like the challenge of helping the field advance and providing patients care that can’t be provided elsewhere. For example, robotic surgery was controversial at first, but now we know patients have better outcomes. As a surgeon, with the magnification of the camera, I can see the location of cancer cells in the throat magnified and in 3-D, which helps us ensure we can get all the cancer out, and we don’t take healthy tissue. We get to places we couldn’t get to before.

This is not an easy field for surgeons. There are devastating consequences for many patients if not cured of their cancers in some of these cases. We can’t cure everyone. Sometimes there’s not more we can do. What’s rewarding is that while I was in training, there were very few places you could go to have this expertise. Being able to train the students, residents and fellows in head and neck cancers and taking great care of patients from around the world has been rewarding. Now we have experts in almost every state and every country who are trained to take care of these patients.

We also are developing new standards of care. Dr. Graboyes on our team is researching cancer survivorship – body image disturbance. People are realizing how people think about themselves and their bodies is an important part of beating cancer. Another researcher, Dr. Neskey, is exploring benefits of administering immunotherapy before having surgery. It’s one of the few trials like that going on in the country.
“You have no idea how many times after the diagnosis I wondered if I’d see the boys get married, graduate college, have grandchildren.”

- Kerry Hardy
The wedding day in Charleston dawned cold and windy. It didn’t matter to the best man, Kerry Hardy, though. He wasn’t supposed to be alive to see the day anyway. The day was a gift, and as fate would have it, just 15 minutes before the ceremony, the clouds parted and the strong winds settled.

The sky dissolved into the colors of a beautiful sunset as the bride and groom exchanged vows. It’s a moment Hardy will never forget, especially since many doctors expected the 54 year-old to have succumbed to non-small cell lung cancer long before February 18, the day of his oldest son’s wedding.

Diagnosed with stage 4 lung cancer in 2015, Hardy knew the weather and his presence were both miracles. The father of four boys lives with his wife Beth in Augusta, Georgia, and is close to all his children.

“I know the trend is going away from Dad being the best man. But Rhodes asked me and pointed out to me that I was the only person that had been there for every important thing he’d ever done. After crying, I accepted with honor. I was so happy to be with him on the biggest day of his life.”

Not only was Hardy there, he was able to deliver a speech with his usual quick wit and down-home style of humor that had his wife rolling her eyes and, by the end, everyone tearing up. Hardy’s quick to explain he’s a man of faith and not afraid of dying. He believes in fighting to be there for his kids, though, so he can experience as many special moments as he can.

“He is one of the most positive guys I have ever met. He’s an ebullient character.”

- Dr. John Wrangle

As immunotherapy clinical trials continue to transform the cancer landscape, more of these miracles are happening. Hardy, who enrolled in an immunotherapy clinical trial at Hollings Cancer Center in 2016, knows he’s lucky, because while immunotherapy treatment works for some, it doesn’t for others. There are many factors that come into play, including the type of cancer and the genetic mutations a person has.

“IT’s exhausting to give bad news all the time,” Wrangle says. He and colleague Mark Rubinstein, Ph.D., teamed up to develop this trial in the hopes they could give lung cancer patients, often diagnosed at later stages of cancer, more options. Wrangle didn’t sleep the night before the trial’s first patient received the drugs. They had never administered this combination of a checkpoint drug, nivolumab, with a new and powerful immune stimulation drug, ALT-803. The side effects were unknown.

Hardy had a tumor the size of a lemon in his lungs. “When you have someone who has a tumor with molecular characteristics like his, you have close to zero expectation that immunotherapy is going to work for it,” he says, adding that he admired how Hardy was in for the fight.

“He is one of the most positive guys I have ever met. He’s an ebullient character. He always makes it his mission to make everyone around him smile. What a wonderful response to being in a predicament that no one wants.”
The Diagnosis

When Hardy was diagnosed with stage 4 cancer in 2015, he was 51 with four boys, his youngest a three-year-old toddler. “You can imagine. It was a shock,” he says.

Hardy, who never smoked, had had a couple of bouts of pneumonia. His doctor said he was too healthy to be having so many infections and wanted him to get checked out. Fortunately, even though nothing was found from scans at one hospital, Hardy had the scans done elsewhere. This time, doctors found a cloudy spot on his lung. After getting a needle biopsy in September 2015, he returned to see a local oncologist, asking to get the results without any sugar coating.

“I’m one of those people who want to know it straight. I want to know what I’m dealing with.” Hardy got what he asked for. “She said, ‘If everything goes well, you may have about two years to live, at the most, with what you have. We don’t see this as having a long-term survival rate.’”

Hardy, who teaches first aid and CPR classes and owns a custom closet business, took it in stride. “I didn’t give up. We had our cry and our big one-day pity party. I said let’s do this today and get it over with, and then let’s go fight.”

They began researching and making phone calls to find the best course of treatment. He put out several feelers and, following up on a lead from a doctor in Miami, Florida, ended up at Hollings Cancer Center, consulting with surgeon Chadrick Denlinger, M.D., and Wrangle.

“It was a little bit of a winding road to get to Charleston, but we realized it was where we were meant to be. That’s all divine stuff. I’m a religious guy, so I believe in all that.” His surgery was scheduled for October 2015. Doctors were hoping the big tumor in his upper left lobe was the extent of his cancer. “As they started surgery, though, they realized other tiny areas that had shown up on scans were also cancerous. They basically closed me up, and we started talking to Dr. Wrangle.”

The only option for him at that point was chemotherapy, which worked for six months and then stopped working, which is what the doctors expected given the type of cancer he had. “That wasn’t a big shock to us. When the chemo stopped working, my tumor doubled in size and that’s when Dr. Wrangle had just been approved for that new clinical trial.”

Hardy knew he’d be one of the first people to get this treatment and that he didn’t have many options. Waiting for the results of a scan after the first round of treatment was nerve-wracking for everyone, he said.

“When we got the first results, we cried. All of us did.” He said Wrangle had warned him that most patients with his type of cancer do not respond to immunotherapy and that he didn’t want to offer false hope. “Dr. Wrangle was ecstatic. He had had some doctors say it wouldn’t work on me. We always had hoped, of course, that the cancer would go away. We knew that wasn’t the reality, though, so we hoped for longevity – that I could live for a long time stable until the next magic bullet comes along.”

Hardy, who saw an almost 30 percent decrease in the size of his tumor, has been stable for two years. He is worried about what will happen when he comes off the trial and stops treatment, but he knows Wrangle has something in mind. “The longer you live – the more magic bullets that get introduced into the market. That’s what’s happening now with all these immunotherapies that are getting developed,” he says.

He takes it a day at a time. “To say I’m ecstatic is an understatement. I’m on the way now to South Georgia to teach CPR and first aid. If you could see me, you’d never know that I have been sick.”

What are Clinical Trials?
Clinical trials explore promising new approaches for cancer prevention, diagnosis and treatment, often providing access to new drugs and interventions before they become widely available. Ask your doctor if a clinical trial is right for you.

Find out more about Hollings’ clinical trials at musc.co/hcc-clinical-trials.
Hardy and family at his son’s wedding

“To say I’m ecstatic is an understatement... If you could see me now, you’d never know that I have been sick.

- Kerry Hardy
Buying Time

Wrangle wishes he could see those results with all his patients and is thankful for the ones who do respond as well as Hardy. The results of the trial were recently published in The Lancet Oncology.

In the early phase 1b trial, there were nine patients of 21 treated who had positive responses with their conditions stabilizing and some experiencing a decrease in tumor size. Of the 21 patients, 11 had previously received immunotherapy that had stopped working. Several of these patients’ tumors shrank again with the addition of ALT-803 to a failing immune-checkpoint therapy. Wrangle says it’s these cases that keep him and his colleague, Mark Rubinstein, Ph.D., pushing forward.

“Observing people who are meeting all kinds of milestones and seeing incredible kinds of things happen in their life that they otherwise wouldn’t have gotten to enjoy and participate in, that’s 100 percent what it’s all about,” Wrangle says. The trial was designed to be delivered in an outpatient setting, and he’s encouraged to see that the treatment seems to be well-tolerated. “We design these therapies so these people can get on with living their lives, not so they can be cancer patients forever and ever.”

Only time will tell if this therapy will bear out in more advanced trials, he said. It’s important to get funding so researchers can keep exploring immunotherapy advances that show great promise. The next phase for him and Rubinstein will be to explore different dosing schedules and further define the mechanisms behind the differences in patients’ responses.

“There’s a lot of work to do with the science to find out who does respond and who doesn’t. To identify the mechanisms of non-responders is just as important as those who do,” he says.

“Will we cure all cancers? Probably not in my lifetime. Will we cure some solid tumor cancers that were previously considered incurable? Yes, there are some people for whom that is going to happen.”

Wrangle cautions patients to not lump all cancers together as one entity, and that not even all lung cancers can be seen as one group, given genetic variations among the tumors. Each case needs a tailored approach. “Our therapy won’t work for everyone, but we desperately want to find out for whom it will work. Will it be a cure? It’s possible, but for a select few. Some won’t be cured but will be alive for years and years just because we’re able to stabilize the disease or reach equilibrium between the immune system and the tumor.”

When that miracle happens though, Wrangle says there’s no better feeling than to deliver good news based on a therapy he and Rubinstein have developed.

“It must be a pinnacle of human experience. It just feels fabulous.”
Unleashing the Immune System to Target Cancer

Colleagues John Wrangle, M.D., and Mark Rubinstein, Ph.D., have been working closely on a clinical trial that has now progressed to phase 2b. This clinical trial focuses on an immunotherapy combination that may help patients with non-small cell lung cancer who do not benefit from checkpoint therapy alone.

In the phase 1b portion of the clinical trial, they targeted white blood cells, the immune cells that help control the killing of tumor cells. They combined two drugs, nivolumab, an immune checkpoint drug that essentially cuts the brake cables on white blood cells, and ALT-803, a lymphocyte growth factor that fuels these white blood cells.

Rubinstein says, “This is the first published trial, to our knowledge, that has studied the combination of these two classes of drugs” Wrangle, the national principal investigator for the study, works closely with Rubinstein and his team to analyze tumor and blood samples from the trial.

Rubinstein says they hope to figure out why some patients are responsive to the drug combination while others aren’t. One of the concerns was that by unleashing the immune system in these two ways, there would be unacceptable toxicity, but they have found that this isn’t the case. Now they have moved on to phase 2b of this clinical trial, which will begin to look at the effectiveness of this treatment.

The hope is that the combined use of these two therapies will improve the response rate. “From a research perspective, what is critical to note is that John Wrangle and I are investigating the white blood cells and what happens to them over time. We want to figure out what changes there are in the white blood cells of patients that have very good responses, and how do we help all patients have the same types of changes,” says Rubinstein.

He hopes that their research in cancer immunology, dealing with lung cancer, will lead to a generalized approach that will work for other types of cancer.

“I became interested in cancer immunotherapy because I was curious about the science, felt this was an area that was understudied, at the time, and most importantly, that this area of research had real potential to be impactful to help patients.

– Dr. Mark Rubinstein
You were recruited to MUSC from Ohio State Comprehensive Cancer Center in May 2013. What was your role there?

I was a professor in the Department of Cancer Biology, and for the cancer center, I was an associate director of basic science. I also led cancer cachexia and pancreatic cancer programs. Cachexia is a condition characterized by extreme weight loss due mainly to muscle wasting that is commonly diagnosed in patients with pancreatic cancer and contributes to a poor prognosis and reduced quality of life.

Can you tell me a little bit about your new dual role here?

The role of the director of the Darby Institute is to bring a research-minded culture to a group of research labs focused on pediatric disease and childhood health. We plan on growing the Institute by recruiting in specific areas, both in childhood health as well as disease. This position also serves to bridge the basic science with the clinical side of the Department of Pediatrics so we can cross pollinate what we do in the lab and what’s done on the treatment side.

With the Hollings Cancer Center, this is a great opportunity to engage more basic scientists, just like myself, to think more translationally. It’s about how we can push our discoveries through a translational pipeline, which allows us to work more closely with clinicians and get new therapies to patients via clinical trials. An additional important component of this pipeline are partnerships that we can build with the pharmaceutical industry, so as to accelerate those discoveries and provide better cancer care. So that’s really what I envision my new position to be.

What is your vision for the future of the research institute?

As the director of the institute, I have to be mindful that we have to be great in research on all aspects of what we do, so that covers other areas besides cancer, such as cardiology, critical care, neonatology, kidney disease, gastrointestinal, as well as neuroscience. The department handles all children illnesses as well as childhood health. We want to make our research as strong as possible to be able to support the hospital and then to obviously increase the reputation of Pediatrics and MUSC by doing that. Part of the attraction of being in Charleston is that it’s an ideal size for us to be able to translate to the community the type of basic and clinical science being performed at the Darby Children’s Research Institute - to let them know that the science is at a high caliber, and that we’re going to be putting even more efforts in making the difference in childhood health right there in our community.
I wouldn’t have taken this position if I didn’t feel the potential. I’m just excited because I’m going to be able to work with a very strong foundation and try to do my best to make it even better. - Dr. Denis Guttridge

How does translational science, which is part of your role here to nurture, benefit patient care?
A perfect example of that is immune therapy, which has created a big buzz in cancer recently. For years people have been working on our immune system, but somebody had to make the discovery in the laboratory that there were specific immune cells, called T cells, that researchers discovered were present in tumors but were not effectively functioning to fight cancer cells. Someone had to get down to a molecular level to understand exactly what factor was being compromised in the immune system that the tumor cell was able to take advantage of. Once researchers gained insight into this puzzle, finding a way to translate those discoveries to the development of actual drugs through the pharmaceutical industry went much faster.

This has led to some remarkable results in patients’ lives. As researchers, that example in immune therapy is often used to explain the importance of basic research and how fundamental discoveries can be translated to effective treatments. Similar types of immune therapies are being implemented right here at MUSC in both adult and childhood cancers. The importance of basic research can’t be overemphasized.

What drew you to take this position?
I have a great admiration for the quality of scientists and physicians here at MUSC, which was the first factor that drew my attention, but I also see tremendous potential in expanding that talent. The ability for the bench researcher and the physician to work together on common problems is often discussed at medical centers, but rarely effectively executed. I think the environment at MUSC fosters those types of relationships, and I am a big believer that big breakthroughs can only be accomplished with collaborative science. I’m excited to be part of this environment and to have the opportunity to make significant differences that will impact the health of our community and the people of this state.
Multiple Myeloma

Researchers who are developing a promising new treatment shown to be effective against treatment-resistant multiple myeloma in preclinical trials received a $2 million grant to develop the compound into an investigational new drug. “Nearly all myeloma patients eventually reach that stage when their physician tells them they have explored all the options, and there’s nothing else,” says Nathan Dolloff, Ph.D. “Our goal has always been to develop that next treatment option and get it to patients as quickly as possible.” Dolloff, founder of startup company Leukogene Therapeutics Inc., says he hopes this could go well beyond myeloma and be applied “to a lot of different cancers.”

Origins of Cancer

Hollings Cancer Center researchers have found that some cells can divide without a molecule that was previously thought necessary. Their results, published online in Genes and Development, explain how liver cells can regenerate after injury. This is important, as it can shed light on how cancer arises and how cancer cells evolve to have additional mutations, which accelerates growth and spread. Authors on the paper included Gustavo Leone, Ph.D., and Takayuki Okano-Uchida, Ph.D. One of the areas of focus in Leone’s lab is studying how normal cells divide to better understand the process in cancer cells, which can divide rapidly and spread. “We are multicellular organisms,” says Uchida. “To make multicellular organisms, it is important to copy cells, so DNA replication is very important to us.”

Melanoma

In adoptive cell transfer immunotherapy, T cells that are able to recognize a tumor are harvested, expanded in the laboratory and then reintroduced to attack the tumor. However, they often do not last long enough to finish the job.

Triple combination cancer immunotherapy improves outcomes in a preclinical melanoma model, according to a study published in Clinical Cancer Research. Combining adoptive cell transfer (ACT) with a pan-PIM kinase inhibitor and a PD1 inhibitor improves outcomes in a preclinical model, report Hollings Cancer Center researchers.

“With this triple combination therapy, many more T cells persisted. That’s important for ACT, because the longer the transfused T cells stay inside the host to fight tumor cells, the better,” says Shikhar Mehrotra, Ph.D., senior author of the article.
Neuroblastoma

A recent study finds that DFMO (eflornithine) increases the survival for children with high-risk neuroblastoma.

Jacqueline Kraveka, D.O., a pediatric hematologist-oncologist at the MUSC Children’s Hospital and a Hollings Cancer Center researcher, says she’s thrilled by a paper published in Scientific Reports that shows the positive results of a phase 2 clinical trial using the oral medication DFMO to prevent relapse in children with high-risk neuroblastoma (HRNB).

HRNB accounts for 15 percent of all childhood cancer deaths, in part because nearly half of all patients who reach remission will relapse.

Kraveka, the principal investigator at MUSC and senior author of this study, says survival for children with HRNB remains a challenge. “These results are groundbreaking and very exciting for oncologists and their patient families. I am thrilled to have our confirmatory study open at so many sites across the U.S. and Canada, enabling children to receive this treatment close to home.”

Lung Cancer

Scientists at Hollings have found that human lung cancer cells resist dying by controlling parts of the aging process, according to results published online in the Journal of Biological Chemistry. The discovery could help researchers better understand aging and eventually could lead to new cancer treatments.

Cancer becomes more common as people get older, but scientists are still searching for answers about why this happens. At Hollings Cancer Center, research into the connections between aging and cancer is led by Besim Ogretmen, Ph.D., SmartState Endowed Chair in Lipidomics and Drug Discovery. “We hope that maybe we can do both: delay aging and prevent the growth of cancer,” says Ogretmen. “That’s the ultimate outcome of this.”
Fun times at the Jerry Zucker Ride for Hope

A picture is worth a 1,000 words so check out our Jerry Zucker Ride for Hope photo gallery on Facebook. The event, held November 11, raised more than $120,000 for research at Hollings Cancer Center. Our heartfelt thanks to all our participants, sponsors, donors, instructors and volunteers.

Gourmet & Grapes 10 Years and Counting

Over the past ten years, Gourmet & Grapes has raised more than $2.8 million for cancer care and research at Hollings Cancer Center. This fabulous weekend at The Sanctuary at Kiawah Island Golf Resort brings together some of the best chefs of the South and beyond, award-winning wines, rare bourbons and lively auctions all for the cause of fighting cancer. Our 2019 events feature:

- A Pappy van Winkle bourbon tasting led by Julian van Winkle
- A Big Easy masquerade featuring James Beard Award winners from the Link Restaurant Group in New Orleans, with Chef Rebecca Wilcomb headlining
- The signature Wine Odyssey Gala showcasing numerous chefs and wineries with exciting silent and live auctions

Thank you to all who have supported this fabulous event since it began in 2009. Make sure you follow us on Facebook on Hollings to be among the first to hear about our plans for 2020! Special thanks to MUSC Health and Alliance Oncology for their support.
Special Events Highlight
MARK YOUR CALENDARS FOR THESE HOLLINGS CANCER CENTER EVENTS.

Linda Floyd Forum on Women’s Cancers
May 1, 2019 // Founders Hall
Learn from a panel of experts about the latest developments in cancer prevention, diagnosis and treatment for women at this complimentary event.

Swing for a Cure
June 21-22, 2019 // Harborside East & Patriots Point
Support sarcoma cancer research and those affected by this cancer during our kick-off party featuring silent and live auctions, and then join us Saturday for a fun day of golf.

24th Annual Golf Tournament
September 23, 2019 // Turtle Point
Join us at our signature golf tournament on beautiful Kiawah Island. Sponsorships, foursomes and individual options are available.

Your Donations Make the Difference!

Our gift is from the heart because it is something we can do beyond ourselves. No strings, no agenda, just an opportunity that we identified that will benefit Hollings Cancer Center, its mission, patients, doctors, researchers and scientists. - Mark and Gail Lang, pictured here with their dog Luca

Mark and Gail Lang made a gift that will have far-reaching impact. By making provisions for Hollings in their estate, they ensure their legacy will be one of giving back and making a difference in cancer research. To learn more about including Hollings in your future plans or to make a tax deductible gift, please contact the Hollings Cancer Center Development Office.

To learn more about how to support cancer research and patient care: musc.co/hcc-development
Spiritual Connections

Standing before a crowd of a couple of thousand people in Florence, S.C., Gustavo Leone, Ph.D., and Marvella Ford, Ph.D., announced their excitement about a new partnership that will enhance community outreach.

They made the announcement to a group gathered for the LevelUP 2018 Fall Planning Convocation and Theological Institute of the Seventh Episcopal District of the African Methodist Episcopal Church. The goal is to develop a long-term partnership that will have a special emphasis on better equipping the medically underserved population of the state with improved education, health and resources.

Part of that partnership includes MOVENUP, which is a statewide cancer education program that uses a train-the-trainer approach that disseminates information about cancer prevention, screening and treatment options. It also features a module on clinical trials and their vital role in developing tomorrow’s cancer treatments. Ford, who leads the program, says it engages the community in improving its own health. Churches are an important part of that outreach.

“I think faith and health go hand in hand in so many ways,” she says.

For many people, church is where they connect and socialize. What better place to foster trust and engage the entire community in becoming healthier, she says. It’s also a perfect setting to discuss the importance of including more diverse populations in cancer clinical trials.

“Even today, many scientific papers include a footnote or statement saying that they don’t know whether the treatment will work in different population groups because the study lacked a sufficient number of representatives from that group,” she says. “If we don’t participate in trials, we’re missing out on important information.”

Four Areas of Focus

1. Lifestyle
   Enhancing healthy living by increasing exercise and healthy eating through periodic sessions with cancer center experts

2. Education
   Promoting cancer education, awareness and prevention through monthly train-the-trainer sessions with church health leaders

3. LOWVELO
   Providing an annual physical activity/bike ride fundraising event

4. Planning
   Participating in an annual health strategy planning session

“"I think faith and health go hand in hand in so many ways." - Dr. Marvella Ford, associate director of population sciences and community engagement
MUSC/Clemson Partnership

Hollings Cancer Center and Clemson University’s Joseph F. Sullivan Center partnered in 2016 to expand mobile screening services from nine Lowcountry counties to a total of 27 counties throughout the state.

Melanie Slan, program manager of outreach and community relations at Hollings Cancer Center, applauds the partnership because it enhances community outreach.

The state demographics reflect an underserved, largely rural population with a high percentage of minority women who experience significant barriers in accessing cancer prevention and early detection services. From 2018 to 2021, the two mobile vans will expand breast and cervical cancer screenings. This will enhance work that already is being done. During the past five years, the mobile health unit has provided mammograms and cervical screenings to more than 7,000 women. Annually, about 15 percent of these women are identified as needing additional follow-up appointments and, during the past five years, more than 40 women were diagnosed with breast or cervical cancer. Women needing diagnostic or treatment follow-up are provided direct navigation services to ensure timely access to care. Of the women screened in the mobile health unit, 80 percent report they would not have sought breast or cervical cancer screening if not for the mobile unit coming to their community. Slan says the mobile health unit also offers periodic services for skin cancer screening for men and women.

I’m excited that we have expanded our reach to so many counties in one year. Increasing cancer knowledge and access to cancer screening will lead to early detection of cancers.

- Melanie Slan

FAST Facts

› 75% of new cancers and deaths in S.C. are caused by preventable lifestyle factors.

› All 46 SC counties contain areas designated as medically underserved.

› 12 - 27 Since the beginning of the MUSC/Clemson partnership in 2016, MUSC mobile screening services have expanded from 12 Lowcountry counties to a total of 27 counties throughout S.C.
A Simple Relaxation Exercise

The following exercise combines deep breathing and art-making which can help calm the nervous system and the overworked mind. All you need is five to 10 minutes and some colored pencils or markers. To begin, sit still and tall somewhere comfortable. If possible, plant both of your feet on the ground and close your eyes. Begin breathing through your nose. Inhale for a count of two... hold the breath in for a count of one... exhale gently, counting out for four... Keep your breathing even and smooth. Repeat this breathing pattern for a couple of cycles. Then, gently open your eyes and notice how you feel. You can prolong this relaxed state by coloring in the mandala (pictured right), which is thought to promote a sense of calm and well-being. These simple exercises can be used anytime and are most effective when practiced regularly. Devoting just a few minutes each day to implement relaxation techniques can make a positive impact on our overall health and happiness.

Exercise provided by Marie Doll.

All her life, Marie Doll has found art to be comforting and therapeutic. It was no surprise to her to find that it works the same for patients. Growing up in a medical family, it brings her joy to be in a career as a registered art therapist, where she can bring cancer patients comfort and healing through the arts.

Katie Hinson, who coordinates the Arts in Healing Program at MUSC Health and Hollings Cancer Center, welcomes Doll as the newest member to the team. She continues to be impressed by Doll’s dedication to patients and to the field of art therapy.

Doll, a board certified and registered art therapist, won a research poster presentation in 2018 at the National American Art Therapy Conference in Miami, Florida. The poster highlighted the results of a study published in the Journal of Clinical Oncology. The study found that art therapy improved mood and decreased pain and anxiety among patients undergoing chemotherapy treatment.

“Art therapy is truly about the therapeutic creative process, the relationship with the therapist, and the healing potential between the two. Fortunately, there is no skill needed for a patient to benefit from art therapy. It’s a powerful tool for patients and family members to express themselves, communicate, and have a cathartic experience through art making.”
Volunteer Spotlight: Amy Merritt

Volunteer Amy Merritt has a full-time job as a human resources specialist with the U.S. Department of State. She arranges her hours, though, to make time to do pet therapy to cheer up patients and staff at Hollings Cancer Center.

What makes Athena so special?
My husband Scott and I brought Athena home when she was only six weeks old. That is very young, but her mother stopped feeding the entire litter, so it was time for the six pups to go to their forever homes. We know the owners of her father, Zeus (hence her Greek name), and he is the biggest, gentlest German Shepherd dog we had ever seen. Weighing in at 110 pounds in his prime, Zeus attended pool parties with his owners and walked around the yard with sunglasses on! When we found out his owners had a female German Shepherd and were going to breed them, we knew we wanted one of his pups. We got the pick of the litter, and luckily Athena is mellow just like her father.

What inspired you to do pet therapy?
This always brings a tear to my eye, literally. In September of 2015, my father was diagnosed with multiple myeloma, in which cancerous plasma cells weaken the bones. The cancer was found when my father stepped up to enter a building and broke his hip. After hip replacement surgery and a brief period of rehab, he started radiation therapy in southern Indiana. He never talked about his treatments, but he did mention the Saint Bernard named Molly that greeted him in the waiting room every day. And while my father was undergoing radiation, my mom visited with Molly and her handler in the waiting room. I knew then that therapy dogs truly made an impact on patients and their families in medical settings. I lost my father to cancer just two months after he was diagnosed, the day before Thanksgiving 2015. Shortly after that, I took Athena back to training for a refresher course and learned about Southeastern Therapy Animal Resources (STAR), a local group that advocates therapy work in any public setting.

Why is it so important?
I have many stories! It’s amazing how Athena just seems to know who needs her, whether it’s a patient, family member or employee of the hospital. On Athena’s first visit to MUSC, we visited an elderly man who had suffered from a stroke. He was sitting in a chair in his room, and Athena sat at his feet and he patted her on the head. He called her a “nice dog.” When we left his room, the nurse followed us out and said, “Those are the first words he has spoken since his stroke!” I cannot tell you how proud I was of my dog that day. And just recently, as a woman was coming out of an office in Hollings, Athena walked right up to her and leaned against her legs. As the woman petted Athena’s head, she said, “I just found out I am going to be admitted today, and I’m going to miss my dogs.”

How is Athena settling into her new role?
Our visits to Hollings are incredibly rewarding. Dogs act as an ice breaker and instant conversation starter when patients are lonely and scared, or they remind people of the pups they have left at home while in the hospital. Patients, visitors and staff at MUSC and Hollings have been nothing but kind to us. Everyone is friendly and grateful. Some of the nurses even have treats stashed in desk drawers, and believe me, Athena remembers where those are! Ironically, I ran into Athena’s puppy trainer as we were leaving Hollings one Friday morning. She was thrilled to see Athena in action, and I told her we’d been volunteering for about a year now. She took a picture of Athena in her bright pink vest that says “Pet Me,” and she cried as she gave me a hug.
MUSC Health ranked 24th in Cancer Care by U.S. News and World Report.

This is no ordinary bike ride. Established in Charleston, South Carolina, LOWVELO is a grassroots movement that raises money for innovative and life-saving cancer research. We are a family of riders, virtual riders and volunteers who are part of a movement to end cancer.