

TODAY'S BEST CARE, TOMORROW'S BEST HOPE:

Together, We Make an Impact



UNC

LINEBERGER COMPREHENSIVE
CANCER CENTER



Shelley Earp, MD, director of UNC Lineberger, and David Routh, UNC chancellor for development present Champ and ET Mitchell, center, with a custom textile piece by artist Elaine O'Neil.

We can do more to fight cancer. But it's going to take money.

By W. G. Champion Mitchell

Recently, my wife and I met a pre-school boy who was going through chemotherapy. He couldn't understand why people stuck needles in him or gave him medicine that made him so sick. His parents agonized watching. However, if chemo was successful, he would be able to have a bone marrow transplant. We did not have the heart to tell them the challenges that would present.

The good news is that he will be given new stem cells that grow marrow to produce cells necessary to sustain life. As difficult as this treatment is, we are fortunate to have it and the great doctors and staff to administer it. I know this because I have cancer and went through it.

You can pray your family avoids cancer. The chances are about 40 percent that you will have cancer one day and 54 percent that you or a family member is taking a cancer journey now. Each year, more than 53,000 people in this state will hear, "Sorry, you have cancer."


While this all sounds maudlin, there is great reason for hope and to celebrate the changes underway. The key is research. Since 1992, the death rate from cancer has fallen by 26 percent. This is mainly due to new treatments growing out of research. For example, we are at a point of explosion in immunotherapy research, trials and treatments. Chemotherapy uses toxic drugs to kill cancer cells, but it also kills non-cancerous cells. Immunotherapy teaches a patient's own immune system to kill cancer cells and only cancer cells, thus leaving healthy ones alone.

Cancer is a team sport. This kind of research needs a big, stellar institution that has attracted talented researchers. We must have all of the medical specialties involved and they have to be among the best in the world. That does not come cheaply.

Government will remain a principal source of funding, but probably a declining one. This makes all the more important gifts from those of us who can invest in the public's health and the state's future. My wife Etteinne and I are making an investment in this fight. We have given UNC Lineberger Comprehensive Cancer Center \$10 million to fund this research and continue our investment in immunotherapy trials.

We North Carolinians are fortunate to have UNC Lineberger for research and the N.C. Cancer Hospital for treatment and trials of potential breakthroughs. Not only is Lineberger the only public National Cancer Institute-designated comprehensive cancer center in the state, but it is on the forefront in areas such as genomics research, where it is a leader in the national effort to map the human cancer genome.

Also, its medical faculty includes the 2015 Nobel Prize laureate in chemistry, Aziz Sancar. He discovered how DNA repairs itself. Since damaged DNA is key to many cancers, it is likely to be the basis of future better treatments and perhaps prevention.

The researchers and clinicians at UNC are why I am still here. This is just one more example of how this state's amazing university system, paid for by the sacrifice of generations of our people, benefits all of us. For this we are deeply grateful and we can show it by supporting its cancer research. 

-W. G. Champion "Champ" Mitchell, a retired CEO and former lawyer who served on the UNC Board of Governors, is on the UNC Lineberger Board of Visitors. This editorial appeared in the News and Observer on October 29, 2018.

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FRONT COVER: Left to right: Autumn McRee, MD, Mary Gillam, Kirsten Bryant, PhD, and Jen Jen Yeh, MD. McRee, Bryant and Yeh are part of an extensive group of doctors and researchers working to find solutions to pancreatic cancer, to help patients like Gillam.

Produced by UNC Lineberger Development and Communications. Please direct comments to mary_erskine@med.unc.edu

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Donors make a Difference

UNC Lineberger's Katherine Hoadley, PhD, shares research insights with members of the UNC Lineberger Board of Visitors at Marsico Hall.

Community support, daughter's vision advance cancer care, research for teens and young adults

Sophie Steiner loved all things Chapel Hill, especially the music scene. She also was passionate about improving cancer care and services for adolescents and young adults. For the past five years, her family and the Be Loud! Sophie Foundation have honored her legacy as a champion for other young people with cancer.

Diagnosed with a germ cell tumor in 2012 when she was in ninth grade, Sophie received her care at the N.C. Cancer Hospital and UNC Children's and quickly realized she felt out of place with pediatric cancer patients and adult patients. Plus, some supportive care services, such as yoga, meditation and massage, were only offered to adult patients in the cancer hospital.

Before she passed away in August, 2013, Sophie, 15, asked her parents, Niklaus and Lucy, and her sisters, Elsa and Annabel, to help address the care and support shortcomings adolescents and young adults – ages 13 to 39 – can experience during cancer treatment.

This heartfelt request, and the nearly \$70,000 in donations made in Sophie's memory, led to the establishment of the Be Loud! Sophie Foundation in 2014. The foundation's vision and support led to a partnership with UNC Lineberger to create the cancer center's Adolescent and Young Adult (AYA) Cancer Program in 2015.

The foundation, which has since raised more than \$1.2 million, continues to provide support for the program's annual cost and is also focused on funding a permanent endowment with UNC Lineberger for the AYA program. This summer, the foundation made a \$225,000 donation to the endowment. Combined with the foundation's earlier contributions, and with a key assist from the Eric Montross Father's Day Basketball Camp, the total market value is now nearly \$750,000. Be Loud! Sophie and UNC Lineberger share a goal to build the endowment to \$2.5 million.

Niklaus Steiner believes the authenticity of the foundation's goals, messages and mission have enabled it to generate steadfast community support and raise an extraordinary amount of money in only a handful of years.

"From the very beginning, everything we did needed to reflect the spirit of Sophie and what she believed in, and it was natural for us to rally around the idea of community and music," he said. "We also have stayed super focused. This has always been about UNC, about cancer and about the AYA population."



Foundation board member Eric Montross (left) with UNC Lineberger Comprehensive Cancer Center's adolescent and young adult (AYA) Social Worker Catherine Swift, Medical Director Andrew "Smitty" Smitherman, MD, AYA Program Director Lauren Lux, LCSW, Lucy Steiner, Annabel Steiner, Niklaus Steiner and master of ceremonies Billy Barefoot.



Lucy Steiner said Be Loud! Sophie's fundraising success is directly tied to people's pride in UNC Chapel Hill and North Carolina.

"So many of our donors went to UNC or are affiliated with the university in some way," she said. "There is a sense of 'what do we do well here? We grow young people.' We launch them in to this world, and there is something really compelling thinking about someone whose life has been interrupted by a cancer diagnosis."

Lauren Lux, LCSW, director the AYA program, said the foundation's decision to invest in people sets it apart from other organizations. "They are willing to fund people, and not many people or organizations are that excited about that, but the people are the real backbone of what we're able to do," said Lux, whose salary is funded by Be Loud!

UNC Lineberger also has made significant investments, including recruiting Andrew Smitherman, MD, MSc, to be the AYA program's medical director. In addition to caring for AYA patients, Smitherman is studying survivorship care and care outcomes.

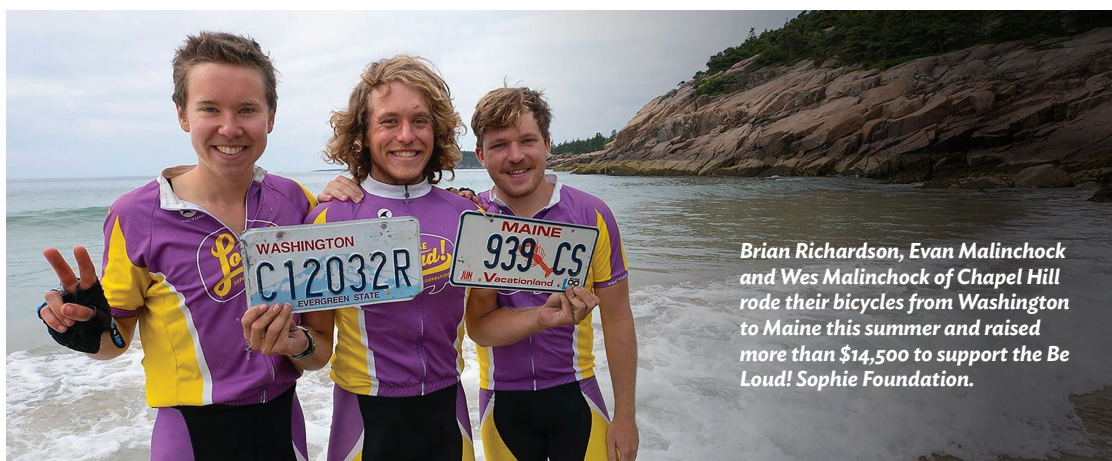
"Learning more about the long-term effects of cancer therapy, and cancer itself, on survivors is critical, especially these young people as they are transitioning from active treatment to survivorship," Smitherman said. "We want to be sure we address what they need to live happy, healthy lives moving forward and, at the same time, we want to investigate ways to identify, or risk stratify, patients who will need more support during that transition."

The foundation's support builds on UNC Lineberger's significant investments in the program, including providing funds for staff, educational outreach and research. Social worker Catherine Swift, MSW, recently joined the staff, which will allow Lux to dedicate time to statewide and national outreach. There is also an initiative to promote participation in clinical trials. Young adults historically have been underrepresented in clinical research, and increasing enrollment numbers could lead to advances in care.

Smitherman and Lux also are working with other providers to improve care for AYA patients across North Carolina. Using Be Loud! Sophie funding, UNC Lineberger, Wake Forest Baptist Health Comprehensive Cancer Center and Duke Cancer Institute host an annual statewide symposium that brings together clinicians and researchers who are interested in improving care for the AYA population.

Niklaus and Lucy Steiner said, looking ahead, making the cancer center's AYA program a resource for all residents of North Carolina, including members of the military who are based in the state, is a priority for the foundation.

"This isn't a nice-to-have service," said Niklaus Steiner. "It's important, and it's essential to improving the care. The foundation has invested in this program. UNC has invested in the program. We now need more donors to invest in it as well."



Brian Richardson, Evan Malinchock and Wes Malinchock of Chapel Hill rode their bicycles from Washington to Maine this summer and raised more than \$14,500 to support the Be Loud! Sophie Foundation.





Storm unites donors behind a good cause

It all started with high winds and rain that lashed the North Carolina coastline, churning slowly through the state and leaving destruction and despair in its wake. While North Carolina has seen its share of hurricanes begin similarly, when Hurricane Florence came ashore on Sept. 14, 2018, it not only created physical changes in the land, it also took an emotional and financial toll on the state's residents, particularly those already facing hardships — cancer patients.

To help alleviate the impact on communities across North Carolina, UNC Lineberger put out the call for donations to help support its Comprehensive Cancer Support Program, a multidisciplinary program dedicated to helping patients, caregivers and families with cancer treatment, recovery and survivorship. UNC Lineberger Director Shelley Earp, MD, and his wife, Jo Anne Earp, ScD, kicked off the fundraising efforts with a donation to a special fund to assist cancer patients and their families who faced hurricane-related hardships. Overall, the effort raised more than \$40,000.

Cindy Rogers, JD, the patient assistance fund coordinator, helps patients and their families with financial challenges as they receive treatment. Rogers had experience with hurricanes before, and knew what patients might need or expect in the coming days after the hurricane. She had seen patient lodging needs expand in the days following Hurricane Matthew in 2016.

Hurricane Florence brought similar issues, and Rogers said lodging was the initial problem for a lot of patients affected by the hurricane, as their home counties were still affected by flooding and damage from the storm.

"They literally couldn't get home," Rogers said. "Typically, we provide lodging for consecutive days of treatment, but what I did was provide ongoing lodging."

Along with Donald Rosenstein, MD, director of the CCSP, and a team of social workers and Patient and Family Advisory Council members, Rogers is exploring additional ways to use the funds to help patients who live in the North Carolina counties most affected by the hurricane.

**"Typically, we provide lodging for consecutive days of treatment,
but what I did was provide ongoing lodging."**

CINDY ROGERS, JD, PATIENT ASSISTANCE FUND COORDINATOR

The group is looking into expanding transportation options for patients in affected counties, with items like gas cards and a possible partnership with rideshare services like Uber and Lyft that can be used by patients who can't get to the N.C. Cancer Hospital for treatment. Patient assessments will also now include questions designed to better identify someone who might benefit from the funds raised through the effort.

"It's clear that this has been an additional burden," Rosenstein said of patients affected by hurricane. "[Cancer's] financial needs are massive, and we can never address as many as we would want to, but the ones that interfere and jeopardize someone's receipt of cancer care, that is our job to address." 🐾





UNC-Chapel Hill's Friday Center served as a temporary shelter after Hurricane Florence. Franklin, a UNC facilities dog, offers comfort to those displaced by the hurricane.



Volunteers bring supplies to UNC-Chapel Hill's Friday Center.





Young donor's maturity, head for technology lead to success

Gratitude is a family value for Ritwik Pavan, 21. The India-born, Cary, North Carolina-bred UNC-Chapel Hill student and entrepreneur has a knack for coming up with big ideas, something passed down to him by his father who emigrated from India with a dream of a better life for his family.

"I've seen him live the American dream," Pavan said. "He came from nothing; he brought his family over here, he helped change the lives of his family in India, and being able to see that was an inspiration for me."

Pavan said his father wanted his children to have a good education and better opportunities to succeed. He's a senior at Carolina this year, and graduation is on the horizon, but Pavan has some other activities on his plate, as well.

Pavan is the founder and CEO of Linker Logic Technologies, a software development company he started while he was still in high school. During the past five years, Pavan has streamlined the company's vision while expanding its footprint, opening offices in the Triangle and India and employing a full complement of staff members dedicated to everything from design and development to testing and project management.

Community is important to Pavan, and since he and his company are based in Chapel Hill, he wanted to give back once his company became a success. Last summer, a friend working at his company helped him research area organizations and found one that fit a laundry list of criteria — UNC Lineberger.

"I decided I really like this organization, and I believe it's something that I can support," he said of making the choice to support the cancer center. "The community that provided the platform for me to succeed is one I deeply care about, and I've had the privilege to be able to give back."

Pavan gave a \$5,000 gift to support the Adolescent and Young Adult (AYA) Cancer Program at UNC Lineberger, which is designed to meet the unique needs of those ages 13-40 who are going through cancer diagnosis, treatment and survivorship.

"I've seen an increase in the trends of younger people getting cancer. It touched me," he said. "Outside of research, there's a lot of support that these kids need. I try to imagine what a young person and their family would be going through."



Spreading awareness was also important to Pavan, and he wanted to help his peers realize how they could make a difference. Pavan tied his gift to a challenge, calling on 300 unique donors to give any amount during a month's time.

"If I want other people to donate, I need to be able to show that I'm supporting it, and I'm giving, too," he said.

Pavan was thrilled to see the challenge working just the way he envisioned – his friends and family spreading awareness and giving to a cause he cared about. Ultimately, the campaign brought in more than \$15,000 for the AYA program.

Pavan is on a successful roll and won't stop there. He has a lot of interests, and he's always looking for the next big thing. In fact, Pavan is a new member of the UNC Lineberger Board of Visitors — its youngest member ever — bringing a fresh outlook to supporting cancer research and care programs.

**"If I want other people to donate,
I need to be able to show that I'm
supporting it, and I'm giving, too,"**

RITWIK PAVAN

"We need to show that we're not just treating cancer, but also show what the program means, how it works, what's the impact?" he said. "I'm looking for new ways to share information and get people to trust and believe they're giving to the right hands." 🙋



Ritwik Pavan





Couple supports cancer research, care with annual gift

Each year, Roy Williams' Fast Break Against Cancer draws in basketball fans and those who are passionate about cancer care and research at UNC Lineberger. Neil and Judy Ramquist of Raleigh definitely fit the bill.

The Ramquists have attended every Fast Break event for the past 15 years and enjoy getting the chance to support two things they care about. "We're big basketball fans," said Neil Ramquist.

"I remember reading about it, and I got online and I said to Neil, 'I just want to go to this,' and thankfully, he had the day off, and we went. I was just so impressed by the program, and we have been every year since," Judy Ramquist said.

"My wife loves Roy Williams, and it's a nice opportunity to donate some money to Lineberger and listen to all the interesting things that Lineberger's doing," Neil Ramquist said.

In addition to Fast Break, with ticket and auction item sales going to benefit UNC Lineberger, the Ramquists are committed donors and members of Lineberger Leadership Partners, an exclusive group of donors who give more than \$1,000 annually as part of the UNC Lineberger annual giving



Neil and Judy Ramquist



campaign. Instead of just sending a check this year, though, the couple decided to take advantage of tax perks offered through an IRA charitable rollover contribution.

Because of his age, there is a required minimum distribution for Neil Ramquist's retirement account. In addition to supporting local organizations like a food bank and their church, the couple also wanted to donate to UNC Lineberger.

"I was just so impressed by the program, and we have been every year since"

JUDY RAMQUIST

"If you donate through a retirement account, it comes out as part of minimum distribution, and effectively becomes tax deductible," he said.

Cancer care and research are of particular interest to the Ramquists, as Neil is a retired radiologist and knows all too well the toll that cancer takes on patients and their families. Cancer has even affected their family, as Judy's brother suffered from bladder cancer and had surgery at the N.C. Cancer Hospital, the clinical arm of UNC Lineberger.

"He lives in Hawaii, but he flew to North Carolina and stayed with us while he had his surgery," Neil Ramquist said. "It's why Lineberger's become so near and dear to our hearts."

The couple said they will continue to give to UNC Lineberger and said the rollover was an easy way to make a donation to help people like Judy's brother, who, happily, has no evidence of disease.

"After his surgery, they predicted 18 months, but it's five years later, he's still alive and doing great. I feel a little more close to [UNC Lineberger] because of it," Judy Ramquist said. 🐾

Why I Give

"Three generations of my family have graduated from Carolina — 1948, 1984 and 2019! During those years, I have seen the UNC hospitals grow and grow. I am proud to give to UNC Lineberger!"

JOHN TUTWILER

"I am a survivor of ovarian cancer and am grateful for all the research that makes such care available. I am hopeful all women will one day have access to the type of cancer care I received and continue to receive."

DONNA G. MILLER

"My wife died several years ago from pancreatic cancer; I am a three-time survivor of cancer, so I am interested and hopeful that your research will help with more survivors. Keep up the good work."

LLOYD G. MILLSTEIN

"My husband, Mark, was diagnosed with pancreatic cancer in 2015. He had the Whipple surgery at UNC and continues to receive such good care from the cancer team at UNC. We are so grateful to the whole department for the genuine concern they have for not only Mark but our daughter and me."

LOUISE FUTRELL

"I support UNC Lineberger because the result of continuing cancer research has the potential to save lives. Everyone I know has a family member or close friend who have been the victim of cancer. In spite of my limited budget, I choose to help."

GLORIA F. HOWARD

UNC Lineberger faculty share insights



UNC Lineberger's Lisa Carey, MD, FASCO, the Richardson and Marilyn Jacobs Preyer Distinguished Professor in Breast Cancer Research, is the chief of hematology/oncology and the physician-in-chief of the N.C. Cancer Hospital. Carey spoke at an event to support For All Kind: the Campaign for Carolina, in Palm Beach, Florida.



Autumn McRee, MD, director of UNC Lineberger's GI clinical trials program, spoke at an event held by Bob and Tracy Winston.



Jon Serody, MD, the Elizabeth Thomas Professor of Medicine, Microbiology and Immunology and director of UNC Lineberger's Immunotherapy Program, spoke at an event held by Bob and Penny Barnhill.

A message for our supporters

We are so grateful for your dedication and commitment to our cause of bringing patients today's best care and tomorrow's best hope. We thank you for your continued support and look forward to making strides in cancer research, treatment and care with you by our side. You may notice that the tiered list of annual giving donors is missing from our publication this year. To view the most comprehensive list of these donors, please visit unclineberger.org/honorroll2019.



A photograph of two healthcare professionals in white lab coats, identified as Lyn Fillip and Victoria Bae-Jump, interacting with a patient. Lyn Fillip is on the left, wearing glasses and a green shirt. Victoria Bae-Jump is on the right, holding a clipboard and looking at the patient. The background shows a clinical setting with patterned curtains. The text "Committed to Cancer Care" is overlaid in a large, blue, cursive font with a yellow underline.

Committed to Cancer Care

UNC Lineberger's Victoria Bae-Jump, MD, PhD, right, and Lyn Fillip, RN, BSN, left, discuss care options with a patient.

Family embraces new phase of cancer journey as daughter rings the bell

Seven-year-old Lorelei Partin is ready to be a regular kid again. She recently had one last visit to N.C. Cancer Hospital's pediatric hematology-oncology clinic, where she was given the all-clear by her doctor, UNC Lineberger's Thomas Alexander, MD, and nurse practitioner Diana Gordon, RN, MSN, CPNP, CPON. She will return for checkups, but she finished her leukemia treatments and was ready to take the next step in her cancer journey — ringing the bell.

Lorelei's mom, Katie Ware, assistant principal at Wiley Magnet Elementary School in Cary, North Carolina, and her family became part of the cancer community in 2017 when Lorelei was first diagnosed with leukemia. Ware had noticed some bruises on her daughter but figured it wasn't unusual for an active preschooler. But a call from another mom changed her mind. "She told me 'Lorelei doesn't seem right. She played all day, but all their games were laying-down games. She doesn't look well,'" Ware said.

She figured blood work could help provide some insight into what was going on with her daughter, but after a shocking appointment, they found themselves on their way to the hospital because the doctor suspected leukemia.

"I thought they were going to tell me I didn't feed her enough broccoli," Ware said. "We went in, and it was very obvious to the pediatrician. She said go straight to the hospital."

Despite the crushing news and whirlwind of emotions, Ware, a UNC alumna, felt at home right away with the doctors and staff at the N.C. Cancer Hospital, the clinical arm of UNC Lineberger. "You can imagine the world kind of cracking open," she said. "You're getting this horrible diagnosis, but it was such a warm and safe place to get that news. There were lots of emotions — both feeling wrapped in love and feeling a lot of fear."

Lorelei, who really wants a guinea pig and loves DC Comics bad girl Harley Quinn and Belle from "Beauty and the Beast," said she likes helping people and helping her friends. Ware has the same outlook, but wanted to take that goodwill to the next level. They started small — a bandage drive that brought in 50,000 adhesive bandages that were donated to the pediatric hematology-oncology



Seven-year-old Lorelei Partin recently finished treatments for leukemia and got to ring the bell in the N.C. Cancer's Hospital's pediatric hematology-oncology clinic.



The Loreleis, UNC-Chapel Hill's women's acapella singing group, perform songs in honor of Lorelei Partin.



clinic, UNC Children's Hospital and UNC Department of Surgery. A gift basket drive was another success; Ware and Lorelei shared baskets with goodies and inspirational messages with moms and families at the N.C. Cancer Hospital. Then they set their sights a little higher.

Ware said after speaking with Stuart Gold, MD, head of pediatric oncology hematology, she was interested in doing an online fundraiser. They set a goal of \$6,000 in 2018 and met it, then decided to double the goal in 2019. Within three weeks, they raised \$12,000.

"It was such a warm and safe place to get that news. There were lots of emotions — both feeling wrapped in love and feeling a lot of fear."

KATIE WARE

"I've gotten bitten by the fundraising bug, and we have the opportunity to get more creative with it," Ware said. "I definitely want to continue doing it." Ware is a longtime Cary, North Carolina, resident and felt that since the community supported Lorelei and her family — husband John, and daughters Catesby, 9, and Elle, 3 — during their time of need, she is happy to return the favor.

"I'm wrapped in love," she said. "I want everyone who has the experience of having a child with pediatric cancer — the whole family — to feel that, and until every family has that experience, we're going to keep going."

Surrounded by family, friends and a team of doctors, nurses and staff at the who all wished her well, Lorelei and her mom read the following words before ringing the bell: "Ring this bell three times well/ its toll to clearly say/ my treatment's done/ this course is run/ and I am on my way."

After she rang the bell three times, Lorelei was also treated to some special guests, UNC-Chapel Hill's a cappella group the Loreleis, who sang songs in her honor. But the best sound of all was the peal of the bell, letting everyone know Lorelei was leaving leukemia in the past and ready to look ahead to her future. 🦋



Katie Ware and John Partin, Lorelei Partin's parents, along with big sister Catesby Partin, 9, help Lorelei ring the bell to signal she's completed her leukemia treatments.





Cancer journey not the only marathon for survivor

One fall morning in 2016, Jeff Cobb, 54, was shaving, just as he did each day before heading to his job at First Citizens Bank in Raleigh. But something felt off. Cobb noticed a bump on his neck but initially did not think it was anything. He later mentioned it to his primary care physician during a routine physical exam who indicated that it was his carotid bulb because you could feel the pulse.

Despite thinking the bump was nothing, Cobb couldn't shake an uneasy feeling about it. His dad had experienced carotid artery issues, and Cobb was worried the bump could be a blockage, so he mentioned it to a doctor friend who worked in vascular surgery. An ultrasound showed a shadow, and after an examination by a local ENT doctor and ultrasound-guided biopsy, doctors diagnosed Cobb with metastatic squamous cell carcinoma.

Though he was diagnosed in Raleigh, Cobb was referred to UNC Lineberger's Mark Weissler, MD, FACS. A Carolina alum, Cobb didn't mind making the trip to Chapel Hill and said he thought the personal attention he received was second to none.

"For me, there was a benefit to being helped by a big health system," he said. "You have the advantage of the tumor board, people comparing notes, clinical trials and the latest thinking."

Catching the cancer early was fortunate, and Cobb got lucky again when Weissler determined it was HPV-related, a more curable form of the disease. "He told me 'we're going to punch your lights out with treatment,'" Cobb said.

But Cobb's treatment regimen was a source of debate for his care team and the tumor board. He qualified for a clinical trial run by UNC Lineberger's Bhishamjit Chera, MD, that offered the same cure rate with less impact to the body. The doctors went back and forth about radiation and chemotherapy options, and Cobb said he ultimately decided to do both, driving to Chapel Hill for treatment every day for 30 days.

Cobb handled his treatments with good spirits, but midway through, he had a question for his doctors. "Can I run a marathon in April?" he asked.

A long-time runner, Cobb had entered a lottery earlier in 2016 to run the 2017 Big Sur Marathon in California, along the Pacific Coast Highway. A group of six couples were planning to make the trip, and two months before his cancer diagnosis in 2016, Cobb got the news that he could run.

"A few weeks later I get diagnosed with cancer," he said. "I thought 'guess that marathon's out the door.'"





Cobb had lost 30 pounds and was having issues with treatment but said Chera was a good sport about Cobb's question, telling him "since you've asked, you're probably going to run." Chera said Cobb was an ideal patient for this goal, since he was already an avid runner.

"He had run many marathons prior to being diagnosed and treated for his head and neck cancer," Chera said. "He came into treatment mentally and physically in 'tip-top shape' and continued to run with his running group during radiation and chemotherapy. He did exceptionally well during treatment and tolerated treatment better than most patients. It didn't surprise me that he wanted to run a marathon soon after treatment."

"I think he thought I wouldn't do it," Cobb laughed. "It gave me a goal. I'm very goal oriented, and realizing that, I learned that it helped me persevere through the rigors of daily radiation in the throat and weekly chemotherapy."

Cobb journaled every day during his treatment and wrote down what he needed to do to get his body ready to run again, creating a training plan based on his previous experience and how his body was reacting. Finishing treatment in November, 2016, Cobb said he was hoping to train immediately after treatment, but his body had other ideas.

The going was rough. Instead of the distance runs and speed work typically done in marathon training, Cobb first had to find the energy to walk. Instead of a well-rounded, healthy diet, Cobb had to start with an extra can of Ensure, then work himself up to eating solid food again.

"I had a negative association with food," he said. "Everything tasted bad. Water tasted like metal. I waited to train until I could eat normal food."





The new year dawned in 2017, and Cobb started training as soon as he could eat again. Then in April, Cobb and his friends finally made it to Big Sur. He was brutally honest about the marathon. “It was not an easy race,” he said. “I had many times when I thought ‘what an idiot, I can’t believe I did this.’” Taking an hour longer than his typical marathon time, Cobb crossed the finish line with his friends beside him and his wife cheering him on at the finish line.

“It gave me a goal. I’m very goal oriented, and realizing that, I learned that it helped me persevere through the rigors of daily radiation in the throat and weekly chemotherapy.”

JEFF COBB

“I went back again this year,” he said of the Big Sur race. “I wanted to run it with a more healthy body. I went back to get redemption.”

Looking back at his cancer journey, Cobb said he became more focused during his illness and recovery, and it helped put things in perspective for him. He said he tries to reach out more to the people in his life and is better able to leave work tasks until tomorrow and spend quality time with his family.

“The Lord’s Prayer says, ‘Give us this day our daily bread;’ and what that means is ‘Lord, give me what I need today.’ The cancer journey makes that prayer very real. You focus on what you need today. You don’t know what tomorrow’s going to be.” 🙏



Jeff Cobb crosses the finish line with his running partners at a marathon in Big Sur, California, in 2017. Cobb ran the race just months after finishing cancer treatments.



Wesley Burks named CEO of UNC Health Care

Wesley Burks, MD, who has served as executive dean for the UNC School of Medicine and as a member of UNC Health Care's senior leadership team, has been named CEO of UNC Health Care, Dean of the UNC School of Medicine, and Vice Chancellor for Medical Affairs at UNC-Chapel Hill.

Burks succeeds Bill Roper, MD, who announced his retirement May 2018 and was appointed in October of that same year to serve as interim president of the UNC System beginning in mid-January. Burks began his new role Jan. 15.

Burks has spent more than 30 years taking care of patients, conducting research, helping to educate trainees, and leading institutions. He joined UNC in 2011 as physician-in-chief of the North Carolina Children's Hospital and was named chair of the department of pediatrics in 2012. In 2015, he was named executive dean of the University of North Carolina School of Medicine.

"It is the highest honor to serve these amazing institutions as CEO and Dean," Burks said. "I look forward to working with many people, especially our talented team, to develop and communicate a strategic vision and long-term goals for the institution, while strengthening our national and international standing. I am humbled and appreciative of the confidence placed in me by the Board of Governors, Board of Trustees and UNC Health Care Board of Directors."

"Wesley's vision for UNC Health Care is so forward looking. He values cutting-edge research across the disciplines aimed at improving delivery of high-quality clinical care for patients," said Shelley Earp, MD, director of UNC Lineberger. "As a pediatrician scientist, he has worked to solve some of the most difficult disease states



facing children and their parents. I know he will apply that same rigor and compassion as he leads our large statewide effort to improve the health of North Carolinians."

Prior to serving at UNC, Burks worked at Duke University Medical Center and Arkansas Children's Hospital. He is a well-published and renowned researcher in the field of pediatric allergy and immunology. Burks led a research team that was recently published in the New England Journal of Medicine for the world's first treatment for potentially fatal peanut allergies.

Burks resides in Chapel Hill with his wife, Jan. They have three children and four grandchildren. ♡





Top cancer minds use smart tools to impact patient care

UNC Lineberger's Ethan Basch, MD, MSc, is setting out to make an impact on cancer care by using one of the best tools in his medical arsenal — cancer patients themselves. Basch, the Richard M. Goldberg Distinguished Professor in Medical Oncology and the director of the Cancer Outcomes Research Program, is highly engaged in patient-reported outcomes research and the benefits it offers to physicians and patients in their care. He is also an expert in the treatment of prostate cancer and has led national guidelines for the treatment of this disease.

Basch is a physician with a literary background, earning degrees in literature from Brown University and Oxford University, before switching gears to medicine in the late '90s, with a doctorate in medicine and master's degree in epidemiology from Harvard University. He came to UNC Lineberger in 2012, with a vision for creating a top-tier patient reported outcomes program, something supported by UNC Lineberger Director Shelley Earp, MD.

"Much of our work in outcomes research involves improving access to care, fairness and equity in care, addressing costs, and making care more patient centered," Basch said. "Many themes and approaches are similar to the areas of interest I had in the humanities and literature. It's about people."

The technology itself is fairly simple — electronic questionnaires focus on important symptoms for cancer patients — for example, whether they've had a fall or if pain or nausea is getting worse. Some answers trigger an alert that is relayed to the care team so they can follow up based on the reported severity of the symptom. The questions can be accessed from a computer, tablet or smartphone, and for those unable to access web-based questionnaires, automated phone calls are just as effective, Basch said, as patients can press a number on the phone that corresponds to their answer or even talk to a team member.

"They answer questions like 'is there anything you want the team to know about?' The patient feels that we want to know that information," Basch said. "If they report something of concern, it sends a real-time alert to the nurse, who then picks up the phone and calls the patient."

Patients are also reaping the benefits of the technology tools, as doctors are able to respond more quickly to patient issues when they arise and can spend more quality time with their patients if they've reviewed concerning symptoms and problems before clinical appointments.

"People feel more connected to their care teams and feel the team is more responsive to their needs," Basch said. "When messages are sent in real time, we can connect with patients right away and head off problems before they worsen, and help patients feel they're in control of their care and that they're more heard."

Early in his career, Basch noticed that patients' symptoms and physical functioning were not being accurately discovered or documented in cancer drug studies or at office visits. So, he conducted a series of studies, finding that around half of patient symptoms were missed in both clinical and clinical trial settings. Using information technology, they used web applications and tablet computers to capture the patient experience. "We found that by using electronic questionnaires, we could capture this information that was otherwise being missed," he said.



While a missed symptom might not seem like a big deal, it can have a profound impact. During drug development and clinical trials, if patient side effects are not reported accurately, doctors won't know the true impact of the drug on their patients and can overlook something that could be managed on the clinical end.

The impact of Basch's work is so far-reaching, both the U.S. Food and Drug Administration and the National Cancer Institute, along with European regulatory authorities, are using the research to set standards for patient-reported outcomes in both clinical trials and clinical care settings. Since arriving at UNC Lineberger, Basch has received more than \$10 million in grants to conduct this work with colleagues, including a recent \$2.8 million NCI Cancer Moonshot grant with UNC Lineberger's Arlene Chung, MD, and Antonia Bennett, PhD, to analyze patient-reported outcomes data for characterizing drug tolerability.

"Trials based at UNC have led this field, and we have shown that by integrating electronic symptom monitoring into cancer care, we can help people live longer, lengthen time they can tolerate chemotherapy, improve physical functioning, and keep them out of the hospital and the emergency room," Basch said. "Many health systems are starting to integrate this approach into care."

And just like the latest smartphone apps, technology for patient-reported outcomes is getting more sophisticated by the day. UNC Lineberger researchers and physicians are exploring new avenues for the technology, including mobile monitoring for patients after surgery, exercise trackers like FitBits to help optimize patient fitness before and after bone marrow transplants and even how patients with cognitive decline can report symptoms they might not remember.

"One thing we're growing here at UNC is starting to build artificial intelligence into these systems," Basch said. "Systems that can connect people through text messaging where it can be more conversational and more tailored to the individual person and to predict who will have problems and how we can flag them."

There are few areas where monitoring technology won't make an impact, and Basch is looking at measuring clinical performance and quality of patient care, and extending the technology into improving electronic health records. He's also interested in the creation of a technology lab that could study emerging mobile technology for monitoring cancer patients, using patient monitoring more often in clinical practice and helping attract the best and brightest minds to UNC Lineberger to learn and develop the technology.

Ethan Basch, MD, MSc, and his colleagues work to explore the patient experience. UNC Lineberger's Bill Wood, MD, MPH, and Ashley Leak-Bryant, PhD, RN-BC, OCN, are studying patient-reported outcomes in patients with blood cancers. Angela Stover, PhD, Allison Deal, MS, and Ben Urick, PhD, are developing new methods for integrating and analyzing patient-reported outcomes into practice. Mattias Jonsson leads a group of computer programmers that create new technology systems for this work.





UNC Lineberger nursing leaders offer skilled training in Malawi

UNC Lineberger's Ashley Leak Bryant, PhD, RN-BC, OCN, and clinical oncology nurse Jen Haley, MSN, RN, CNL, have a passion for developing future leaders of oncology nursing, not just in North Carolina, but globally.

Bryant and Haley have been part of an effort to build the oncology nursing workforce in Malawi, a country in sub-Saharan Africa where UNC-Chapel Hill has an existing clinical and research partnership known as UNC Project-Malawi.


"We desire for nurses across the globe to have the skills, knowledge and resources to be able to provide excellent oncology nursing care," Bryant said.

Bryant, a clinical nurse in the N.C. Cancer Hospital and an assistant professor in the UNC School of Nursing, and Haley, a clinical nurse on the inpatient floor at the N.C. Cancer Hospital, recently traveled to Malawi to work and learn from nursing and other medical staff about caring for people with cancer in advance of the opening of the nation's first dedicated national cancer center.

"Working internationally has always been a passion of mine, especially because I strongly believe health is a human right and all patients deserve high quality cancer care, no matter your ZIP code or the country where you are receiving treatment," Haley said.

Since May, Bryant and Haley provided approximately eight hours of virtual training sessions for more than 50 Kamuzu Central Hospital nurses and Kamuzu College of Nursing faculty. They focused on topics such as cancer epidemiology, cancer treatment and nursing care for four of the more common cancers in Malawi — lymphoma, esophageal cancer, cervical cancer and Kaposi sarcoma.

UNC physicians and researchers have been collaborating with Malawian health leaders since 1990 to provide clinical care and research for HIV and other sexually transmitted diseases. This partnership led to the establishment of the UNC Project-Malawi site in Lilongwe. Last year, Malawian leaders traveled to UNC-Chapel Hill to meet with Carolina leadership, physicians and scientists to prepare for the opening of Malawi's first dedicated cancer center, which is being built adjacent to UNC Project-Malawi.

"Cancer is an enormous, emerging public health problem in Malawi, and the nursing community will be absolutely critical to addressing this," said UNC Lineberger's Satish Gopal, MD, MPH, cancer program director for UNC Project-Malawi, and an associate professor in the UNC School of Medicine Division of Hematology/Oncology. 



Left to right: Jen Haley, MSN, RN, CNL, UNC Project-Malawi's Agatha Bula, PhD, RNM, and UNC Lineberger's Ashley Leak Bryant, PhD, RN-BC, OCN.



UNC Lineberger's Satish Gopal, MD, MPH, is the cancer program director for UNC Project-Malawi.





Advancing Cancer Science

Shawn Hingtgen Lab volunteer David Hesmer looks through a microscope as Kevin Sheets, PhD, explains the slide's results. Hesmer was diagnosed with glioblastoma in 2016 and works with the lab team to help other patients just like him.



Mary Gillam speaks at the groundbreaking of UNC Health Care's new surgical tower. Surgery and aftercare at the N.C. Cancer Hospital saved Gillam's life when she was diagnosed with pancreatic cancer.

Pancreatic advances keep hopes alive for patients and their families

Mary Gillam never thought she'd be celebrating the Tar Heels winning the NCAA Men's Basketball Championship from a hospital ER. Instead, while students partied joyfully outside, Gillam had to face a hard diagnosis — a mass on her pancreas that was later determined to be pancreatic cancer.

"I thought to myself, 'This has to be a mistake. I'm a healthy, young wife and mother of three. I just ran a marathon,'" she said.

It was more than two years ago, when Gillam, a dedicated runner, first started feeling lethargic. She lost her appetite and saw a local physician for some blood work. Tests showed elevated liver enzymes, but the doctor thought she had a virus. The fatigue persisted, and she saw an internist in her hometown of Elizabeth City, North Carolina, for a scan. The results showed a mass.

"I remember asking [the physician's assistant] if I was going to die," she said. "He said 'yes, probably so.'"

Gillam said her father asked the doctor how long she had, and they estimated she'd be gone in 30 days.



“That’s when we understood the magnitude of what I was facing,” she said.

Gillam and her family drove all night from the North Carolina coast to the N.C. Cancer Hospital, the clinical arm of UNC Lineberger. At the hospital, she met with surgical oncologist H.J. Kim, MD, the Ted B. Seagroves Jr. Distinguished Professor at UNC Lineberger.

Coming from a family of Tar Heel fans, she’d heard “Go Heels!” all of her life. But as she faced surgery, it took on a different meaning.

“H.J. Kim came to compete just like the basketball team, but this was my life,” she said.

She would do anything to stay in the world of the living.

“No way was any other girl going to get my very good looking husband,” Gillam said.

“That’s when we understood the magnitude of what I was facing”

MARY GILLAM

Kim removed the pancreatic mass, but Gillam’s journey was just beginning. After surgery, she was confirmed to have pancreatic cancer. Then on her 38th birthday, Gillam learned the cancer had spread to eight of her 15 lymph nodes in addition to the tumor on her pancreas.

“The initial shock was very devastating,” she said. “But I told myself I don’t have time to have a pity party. I have three kids, so I didn’t get to lie around and feel bad; I had to take my kids to school.”

Under the care of UNC Lineberger’s Autumn McRee, MD, associate professor in the UNC School of Medicine Division of Hematology/Oncology, and radiation oncologist Andrew Wang, MD, associate professor in the UNC School of Medicine Department of Radiation Oncology, Gillam underwent radiation and chemotherapy. Both provided compassion and expertise throughout the months of treatment.

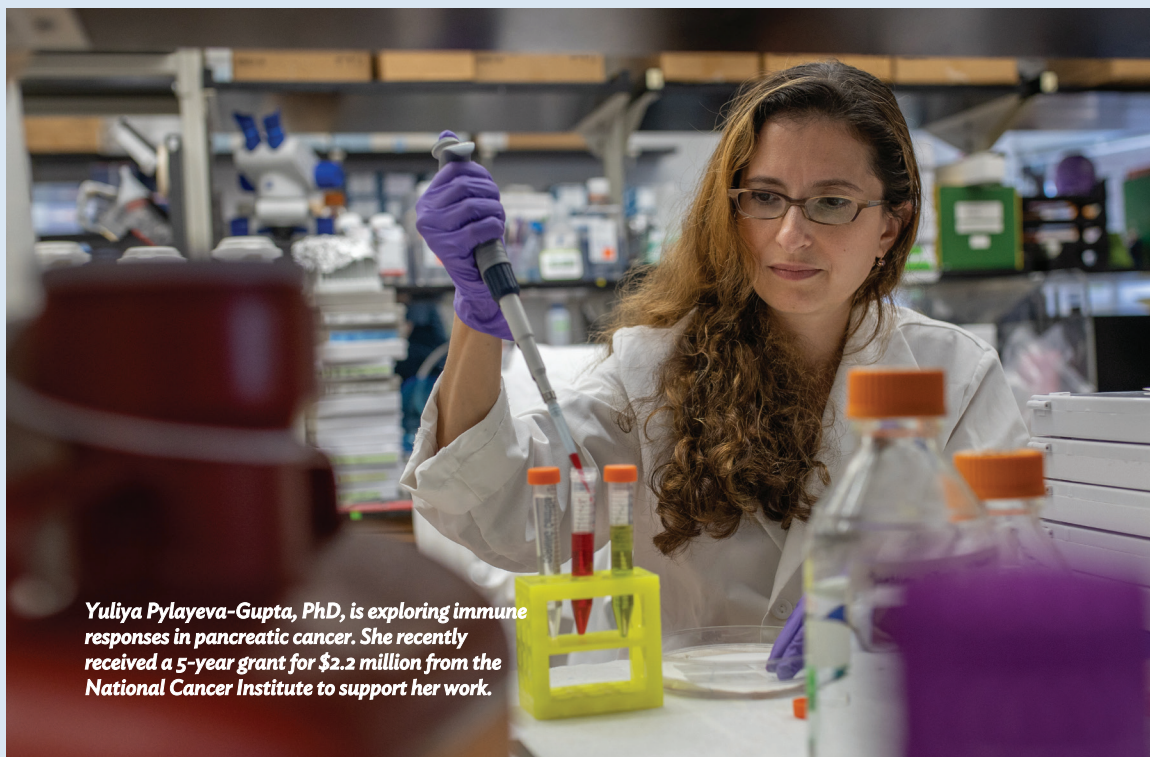
“Dr. McRee and I even got to know each other as she coordinated my care,” she said. “I was immediately impressed, not only by her brilliance, but her kind demeanor. She made me feel like I was her only patient, and I was comforted by her words and optimism. I was going to be in the 25 percent who survives this.”

In 2017, pancreatic cancer surpassed breast cancer to become the third leading cause of cancer death in the United States. Just 9.3 percent of patients in the United States lives five years after diagnosis.

UNC Lineberger researchers are working to identify better treatments in the hopes of improving those statistics.

“We’ve seen the five-year survival rates increase over the past decade, but certainly, those of us in the field are quite aware of the need to do better,” McRee said. “UNC is on the forefront of producing novel science that’s led to innovative clinical trial designs, and the nice thing about having scientists collaborate with us as physicians is that when the trials are complete, we can go back to the lab to understand why some patients may have responded better than others.”





Yuliya Pylayeva-Gupta, PhD, is exploring immune responses in pancreatic cancer. She recently received a 5-year grant for \$2.2 million from the National Cancer Institute to support her work.

Families who have been touched by pancreatic cancer are eager to play a role in advancing these new treatments and finding novel solutions for patients. Philanthropic investments in UNC Lineberger have established the Owen G. Kenan Pancreatic Cancer Research Fund and the Joseph Winpisinger Pancreatic Cancer Endowment, both of which provide targeted funding for the pancreatic cancer team.

UNC Lineberger's Jen Jen Yeh, MD, professor and vice chair of research in the UNC School of Medicine Department of Surgery, is working on precision medicine strategies for pancreatic cancer. She wants to make sure the right treatments are getting to the right patients, as well as to ensure the treatment is getting to the tumor at all.

In a recent study, Yeh and her collaborators analyzed pancreatic cancer tumors at the genetic and molecular levels. Their analysis uncovered multiple different subtypes of this disease. Using these genetic profiles, they are working to develop a test that could be used in the clinic to align treatments with these tumor types.

"Recent treatment advances in pancreatic cancer have shown that if we can get the right therapy to patients and get their tumor out, we can significantly improve survival," Yeh said.

Yeh's lab has also tackled another problem unique to pancreatic cancer. While surgery has been the only chance for a cure for patients to date, only a fraction of patients can actually have the operation. That's because the tumor can wrap around important vessels, making surgery impossible.

In collaboration with UNC Lineberger's Joseph DeSimone, PhD, the Chancellor's Eminent Professor of Chemistry, Yeh has co-founded a company to develop a device that uses electric fields to drive treatments directly to tumors. The device is expected to move into first-in-human studies next year.



**“Recent treatment advances in pancreatic cancer have shown that
if we can get the right therapy to patients and get their tumor out,
we can significantly improve survival”**

JEN JEN YEH, MD



And Kim, Gillam’s surgeon, is also working to bring the latest advances in surgical research to patients with pancreatic cancer at the N.C. Cancer Hospital. He led a hospital quality initiative to optimize clinical outcomes after pancreatic surgery called Enhanced Recovery After Surgery. In addition to leading several ongoing studies in locally advanced pancreatic cancer, UNC Lineberger will be part of a national, multi-center clinical trial to study the role of intraoperative radiation therapy for patients with locally-advanced pancreatic cancer after neoadjuvant chemotherapy. Led by collaborators at Massachusetts General Hospital in Boston, UNC Lineberger is expected to be one of the few sites included nationally.

In the lab of scientist Channing Der, PhD, member of UNC Lineberger and the Sarah Graham Kenan Distinguished Professor in the UNC School of Medicine Department of Pharmacology, researchers have been looking for alternative new treatment strategies for pancreatic cancer. Researchers have known that a gene, KRAS, is mutated in the majority of pancreatic cancers, but until recently, this mutated protein has been considered “undruggable.”

Der’s lab recently discovered a promising approach, published in the prestigious journal Nature Medicine, that led to plans for multiple clinical trials for pancreatic cancer with mutations in the KRAS gene. In this approach, researchers studied a drug combination they designed to starve pancreatic cancer cells. They first used a drug to force pancreatic cancer to rely on a single energy source and then another to deny the cancer that same source.

Based on these findings, Der and his collaborators have initiated two clinical trials, one with researchers at the University of Texas M.D. Anderson Cancer Center and the other at UNC Lineberger and the Dana-Farber Cancer Institute for KRAS-mutant pancreatic cancer patients. The trial at UNC Lineberger will be led by McRee and will also evaluate the efficacy of targeting a protein called ERK in combination with an autophagy inhibitor based on Der’s published study.

Similar findings from researchers at the Huntsman Cancer Institute, published simultaneously in a letter in Nature Medicine, have also led to a clinical trial at the University of Utah that will evaluate a related therapeutic drug combination.

These trials mean the potential for more therapeutic options for patients, said Kirsten Bryant, PhD, a scientist in Der’s lab who was the first author of the study published in Nature Medicine. She lost her father to pancreatic cancer and has been fighting to create more treatments options for patients like her dad ever since.

“This may not cure pancreatic cancer, but it’s another step toward more treatment options,” Bryant said. “I’m going to keep improving this combination for future use and looking for other treatment strategies that could benefit pancreatic cancer patients.”





H.J. Kim, MD, left and Channing Der, PhD, discuss treatment strategies for pancreatic cancer, a focus for Der's lab research and Kim's surgical work.

Another study out of Der's lab has resulted in an early-stage clinical trial that is already actively enrolling patients at the N.C. Cancer Hospital. In the trial led by McRee, researchers are studying the safety and efficacy using a drug combination that involves an investigational compound called an ERK inhibitor in order to block a hyperactive growth signal in pancreatic cancer.

"I am driven by a sense of early optimism in the field that the needle is starting to move to improve survival, but I would like to see it move faster," McRee said.

McRee said yet another study will take a different approach: UNC Lineberger researchers are studying using the immune system to try to attack pancreatic cancer.

In collaboration with the UNC Lineberger Clinical Immunotherapy Program, researchers are studying whether they can genetically engineer a patient's own immune cells to track and attack cancer. McRee is developing a novel clinical trial for pancreatic cancer using this type of treatment, called chimeric antigen receptor T-cell therapy, or CAR-T therapy.

"This trial will draw on the strengths of our CAR-T program at UNC that will provide a unique treatment for patients with pancreatic cancer," McRee said. "That trial is looking at a novel target evaluated by our cellular immunotherapy team at UNC Lineberger that has shown great promise in pre-clinical models of pancreatic cancer. While the trial is written and ready to go, additional funds for this trial will be needed before patients can be enrolled."

Gillam is now more than two years away from her surgery, and she remains cancer-free. She has received support from her home town and her church. She is still running – about five miles each day. She's also trying to live for the moment.

"I honestly just love my life more, and my children harder, and our relationship is a priority over the small stuff," she said.

She also feels that McRee, and others on her care team at UNC Lineberger, were life savers.

"I truly could not have gotten through this without Chapel Hill's support," she said. "No matter what the outcome is, I will never regret Chapel Hill. The whole team has been outstanding." 🙏



Cancer science goes high-tech with advancements in computational medicine



UNC Lineberger researchers are betting that computer technology that has made self-driving cars and facial recognition possible could play a role in the next big cancer research discovery.

“It’s the future of medicine,” said UNC Lineberger’s Charles M. Perou, PhD, the May Goldman Shaw Distinguished Professor of Molecular Oncology in the Department of Genetics and Department of Pathology & Laboratory Medicine.

Perou, along with UNC Lineberger’s Tim Elston, PhD, professor in the Department of Pharmacology, is co-director of the new Computational Medicine Program. In this program, the researchers are looking to combine advanced computing and data analysis expertise in order to make discoveries to improve care for an array of diseases, including cancer.

The new program will take advantage of investments that UNC-Chapel Hill has already made in research computing technology. Two strings of computer clusters on campus have the ability to make analyzing large data sets very efficient, Elston said. But Perou said it’s not the hardware that makes the program unique.

“We’re in a revolution; we have the ability to collect huge amounts of data, but now we have to take advantage of it,” Perou said. “The insights just don’t come out of it, you’ve got to develop new mathematical methods to extract the insights.”

On the 11th floor of a newly renovated Mary Ellen Jones building, Perou and Elston are amassing a team of great minds. They recruited two new faculty members and expect to add as many as four more.

Already, researchers have begun their work.

With a five-year, \$1.875 million grant from the National Cancer Institute, Perou and Elston are studying whether they can predict resistance in breast cancer. They are studying a particular pathway of signals that can be dysregulated in breast cancer called the RAS-MAP kinase pathway.





“These signals get turned on, and drugs used to treat the cancer work for a while, but these systems are very smart at working around the drugs and becoming resistant,” Elston said. “We’re trying to understand how these tumor cells become resistant and figure out ways to stop that from happening.”

The scientists plan to develop models of how resistance develops by using data from breast cancer samples to develop statistical models.


“We know how to describe all of the biochemistry that goes on in these cells; we can describe all of that mathematically,” Elston said. “What has been lacking is the data to train these models so that you can predict, when you make perturbations to the system (using medications), what’s going to happen.”

In another study, Perou and other researchers studied the use of artificial intelligence to analyze breast cancer images. In a study published in NPJ Breast Cancer, they reported they were able to train a computer to identify complex molecular and genomic features from images.

The project involved using “machine learning,” in which a computer “learns” to see patterns in the images.

Perou said researchers now want to know what the computer is “seeing” exactly, as well as to use the computer to develop predictors of patient outcome.

The researchers see a lot of promise for the field.

“We’re hoping this will be a new leap,” Perou said. “There’s no way a human can stare at 10 million data points, and say, ‘this is driving your cancer, and I’m going to give you that drug,’” he added. “These methods allow us to find the structure and make ... sense of 10 million data points, and if we can model it, we might be able to make predictions about what will happen.” 



To beat cancer, UNC Lineberger researchers look to catch it early



UNC Lineberger researchers have launched initiatives across North Carolina to boost screening for two cancers that can be caught early — in the hopes of preventing them from developing at all.

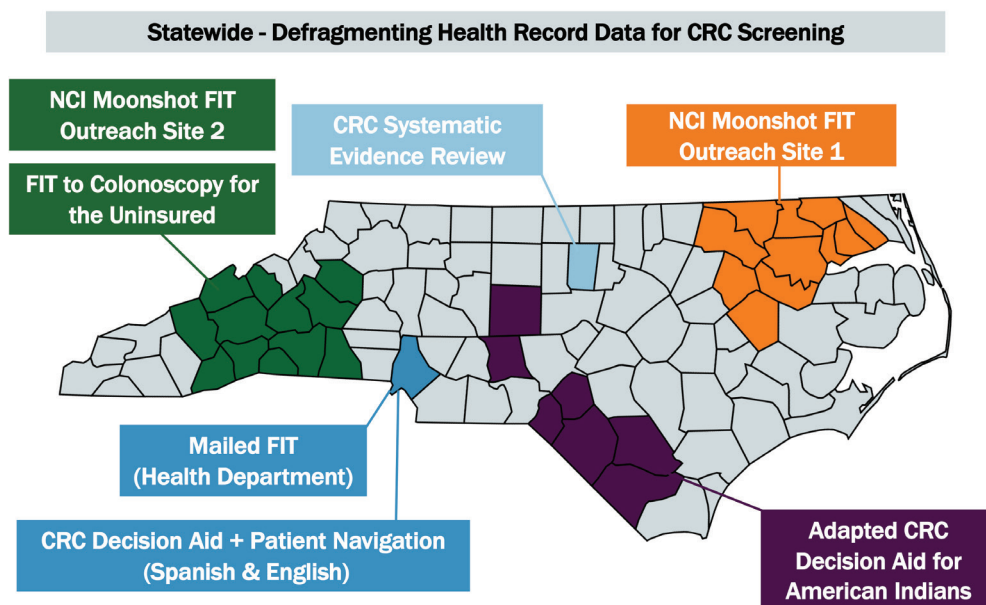
Through the Carolina Cancer Screening Initiative (CCSI), UNC Lineberger’s Daniel S. Reuland, MD, MPH, professor of medicine in the Division of General Medicine and Clinical Epidemiology and CCSI director, is working to combat colorectal cancer, the No. 2 cause of cancer death nationally among both men and women.

The multi-pronged initiative focuses on increasing access to screening and awareness in areas and populations that have the greatest need in North Carolina.

“Colorectal cancer screening is a missed opportunity for cancer prevention and control in the United States and in North Carolina, and it’s mostly poor, rural, uninsured minorities who we know aren’t getting screened,” Reuland said. “We know screening works, it’s been studied, it’s effective, but it isn’t happening, and there are lots of reasons why. We’re really trying to move the needle on colon cancer screening here and nationally.”

Reuland’s team has launched multiple projects already, including efforts to develop a tailored education program for American Indians in Robeson County and a Spanish-language screening awareness program. In collaboration with the Mecklenburg County Health Department in Charlotte, researchers mailed a screening test, called a FIT kit, to patients insured by Medicaid and not current with screening.

CRC screening project portfolio





CCSI was recently awarded a five-year, \$5.5 million grant from the National Cancer Institute Beau Biden Cancer Moonshot Initiative to build on their efforts. The project, known as SCORE, which stands for Scaling Colorectal Cancer Screening Through Outreach, Referral, and Engagement, will be tested in community health center networks that serve two representative regions across North Carolina, including an 11-county region in northeastern North Carolina with higher than average colorectal cancer mortality, sometimes referred to as a colorectal cancer “hotspot.” The larger goal is to create a long-term state-level strategy to reduce CRC burden and disparities through improved screening in community health center populations.

“We’re targeting colorectal cancer screening in vulnerable, rural populations across the state,” Reuland said.

Although cervical cancer is preventable through early detection and treatment, the American Cancer Society estimates that more than 4,200 women will die from cervical cancer in the United States this year. Researchers at UNC Lineberger are testing innovative cervical cancer screening methods to reach people who are overdue for testing in North Carolina, as well as around the world.

In one study, researchers led by UNC Lineberger’s Jennifer S. Smith, PhD, found that mailing self-collection kits to test for high-risk human papillomavirus (HPV) infection has the potential to boost cervical cancer screening – especially for low-income women in North Carolina who are overdue for testing. HPV is linked to development of cervical cancer in women.

Smith is also part of a team that was awarded a \$5.1 million grant to combat cervical cancer in Malawi, a country in sub-Saharan Africa where cervical cancer is the leading cause of cancer death among women.

“Women are dying unnecessarily of cervical cancer, which is highly preventable,” Smith said. “It is not rocket science to know that increasing cervical cancer screening and treatment coverage among under-screened women globally and in the United States — including North Carolina — will save lives.” 🌍



Dan Reuland, MD, MPH

Jennifer Smith, PhD



Teaming up in the lab and in life: researchers make an impact on cancer science



From an early age, they were both fascinated by science; he was amazed by advances in genetic engineering, and she was learning everything she could about plants. Fast forward to today, and UNC Lineberger researchers Gaorav Gupta, MD, PhD, and Yuliya Pylayeva-Gupta, PhD, are using their natural curiosity and drive to tackle the problem of cancer.

Pylayeva-Gupta is a cancer immunology researcher who's studying how to boost the immune system's ability to respond and fight pancreatic cancer. Gupta is a physician-scientist working as a radiation oncologist in the clinic and researching cancer genetics in the laboratory.

Pylayeva-Gupta was born in Azerbaijan and immigrated to the United States before college. She had a natural interest in problem solving, and cancer was the most complex problem she knew of in biology. Gupta grew up in Chicago and found his calling during a summer internship at the National Cancer Institute as an undergraduate studying at the University of Chicago.

They met during graduate school at Weill Cornell Medicine in New York. After they completed their training, they accepted positions at UNC Lineberger because they found the cancer center valued all aspects of their research and offered a nurturing, collaborative environment.

"What they were primarily interested in was excellent cancer science, and they saw what we were doing and valued each of us independently," Gupta said.

It was soon after they started dating in graduate school that Gupta had one of his biggest breakthroughs. Pylayeva-Gupta had left for a trip abroad, and Gupta worked into the early hours of the morning to distract himself from her absence.

While he was poring through his data, he discovered a set of breast cancer genes that can cause the cancer to metastasize, or spread. The findings were published in the prestigious journal *Nature*.



Yuliya Pylayeva-Gupta, PhD, and Gaorav Gupta, MD, PhD, are planning a project that will combine their expertise in radiation, as well as immunotherapy.





At UNC Lineberger, Gupta is working on an experimental blood test that's shown promise for tracking HPV-linked head and neck cancer. He is also studying how DNA becomes abnormal and unstable in cancer.

"We're beginning to unravel new ways in which DNA in cancer is altered, and I'm very excited about the prospect that this may lead to new opportunities to take advantage of those abnormalities for therapeutic benefit," he said.


Pylayeva-Gupta studied cancer cell growth in graduate school. Inspired by studies by pioneering women in the field of cancer immunology, she researched the intersection of the immune system and cancer cell growth during her postdoctoral training at New York University. One of her most significant findings was that cancer cells can modify what's sent out into their environment to control the immune response.

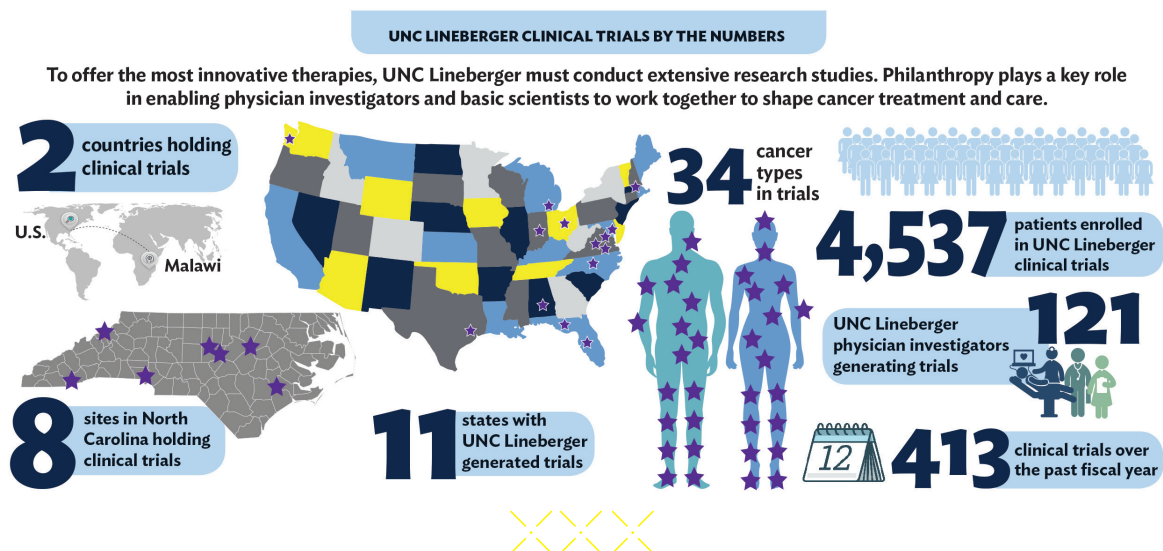
"I showed that oncogenic drivers in cancer cells not only contribute to the cancer growth, but they also modify what cancer cells send out to the environment and controls the body's response to cancer," she said.

Now, the National Cancer Institute has awarded more than \$2.2 million to Pylayeva-Gupta across five years to understand the immune response in pancreatic cancer. In addition, she and Gupta, along with UNC Lineberger's Victoria Bae-Jump, MD, PhD, each received an NCI Method to Extend Research in Time (MERIT) Award. This highly competitive award provides seven years of funding, rather than the standard five, giving young investigators more time to focus on conducting their research. The pair has also received funding through UNC Lineberger's competitive Developmental Funding Program, funded in part by philanthropic seed grants. Gupta and Pylayeva-Gupta are also planning a project that will combine their expertise in radiation, as well as immunotherapy.

"It's really because of the support, collaborative culture, and infrastructure here at UNC that has made that possible," Gupta said.

At home, they don't geek out all the time about science. They love to travel. Gupta is a hobbyist house music DJ and he also practices martial arts. Pylayeva-Gupta plays piano. Her favorite classical music composer is Franz Liszt. They have two girls, ages 7 and 4.

While their tastes in music differ, they share a belief in the importance of basic science research to drive transformational medical discoveries. 



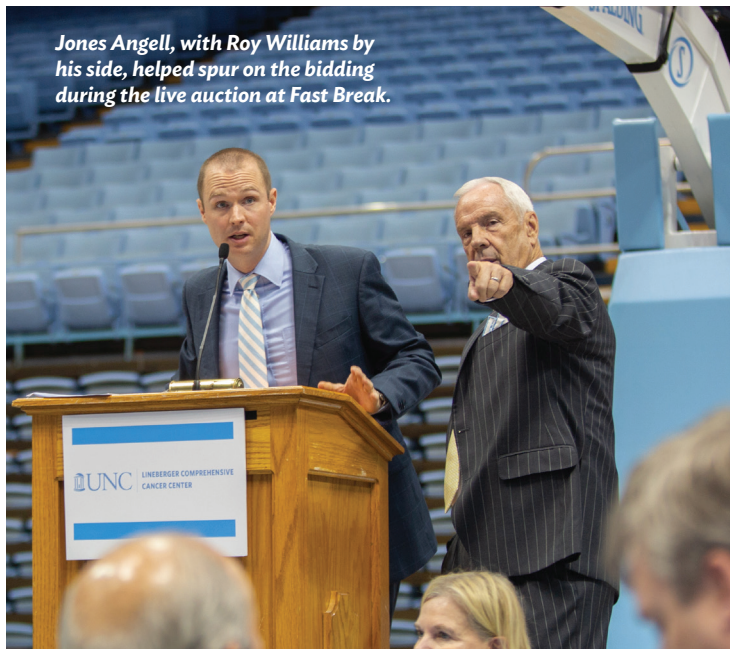
A photograph of two male students participating in an outdoor rowing event. They are seated on ergometers, pulling the handles with effort. The student in the foreground is wearing a blue t-shirt and dark shorts, while the student behind him is wearing a yellow t-shirt. In the background, a building with large windows and a person in a purple shirt and white hat are visible. The scene is set outdoors on a sunny day.

Community Impact

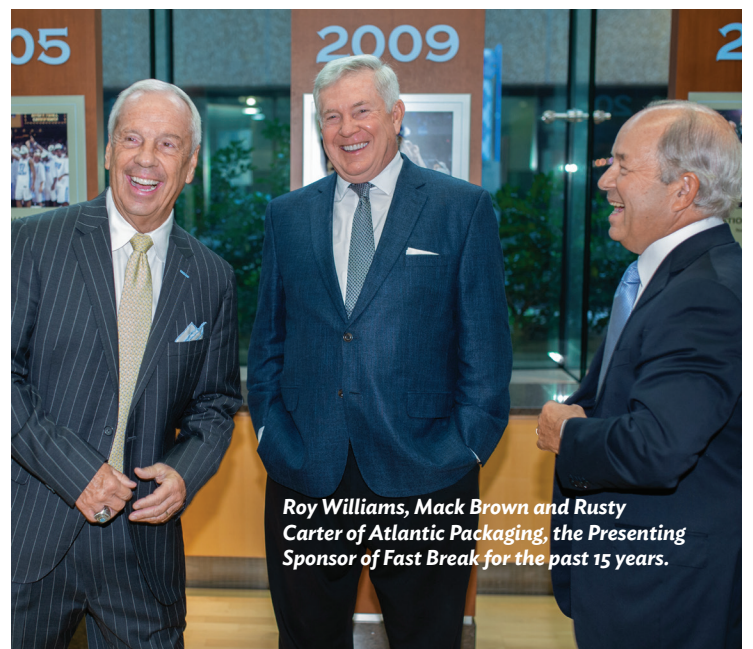
Students participate in UNC Women's Rowing's annual Erg-A-Thon to raise money for UNC Lineberger.



Roy Williams and Mack Brown at the Fast Break event in 2018.



Jones Angell, with Roy Williams by his side, helped spur on the bidding during the live auction at Fast Break.



Roy Williams, Mack Brown and Rusty Carter of Atlantic Packaging, the Presenting Sponsor of Fast Break for the past 15 years.



Fast Break raises funds, awareness for cancer research



UNC Men's Basketball Coach Roy Williams is an expert at raising the bar and level of play during big games. He's also a pro at raising money for cancer research at UNC Lineberger.

The 14th annual Roy Williams' Fast Break Against Cancer, held Sept. 25, 2018, on the Roy Williams Court at the Dean Smith Center, raised \$234,936 through ticket sales, a live auction and online auction. The event has brought in more than \$2.7 million since 2005.

"Every person knows someone in their lives who has been touched by cancer," Williams said. He told the group that he had lost a dear friend, Ted Seagroves, to pancreatic cancer four years ago, and he and his wife would be contributing to the Ted B. Seagroves Jr. Distinguished Professorship Fund, which was established in his friend's honor; its first recipient was UNC Lineberger surgeon H.J. Kim, MD.

Joining Williams at the event was another legendary leader — UNC football coach Mack Brown, whom Williams fondly called a friend and a "North Carolina guy."

"Cancer is an awful word that's touched many lives here in this room and will touch many more lives in this country," said Brown, whose wife, Sally, is a cancer survivor. "I would encourage you, if you've got friends with cancer, if you've got family members that have cancer, talk to them about it. Reach out. Ask them how they're feeling. Make sure you know they're OK."

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MACK BROWN

Brown said looking back on his family's journey with cancer, he is grateful to UNC Lineberger and all those who attended the Fast Break event. He said he is so impressed with the strides that have been made in cancer research since Sally's diagnosis at 29 and is grateful to those who believe in a world without cancer.

UNC Lineberger Director Shelley Earp, MD, said the cancer center serves the state of North Carolina and the public by combining compassion and research and through great care and community outreach on screening information, educational materials and telemedicine.

"The attraction to the N.C. Cancer Hospital, to UNC campus and to UNC Lineberger has galvanized the treatment of cancer across the state. Because we not only take care of folks here, but we're here for the public," he said. "Every opportunity we have to do research and how to make it better for the people of North Carolina is helpful and is fueled by people like you."

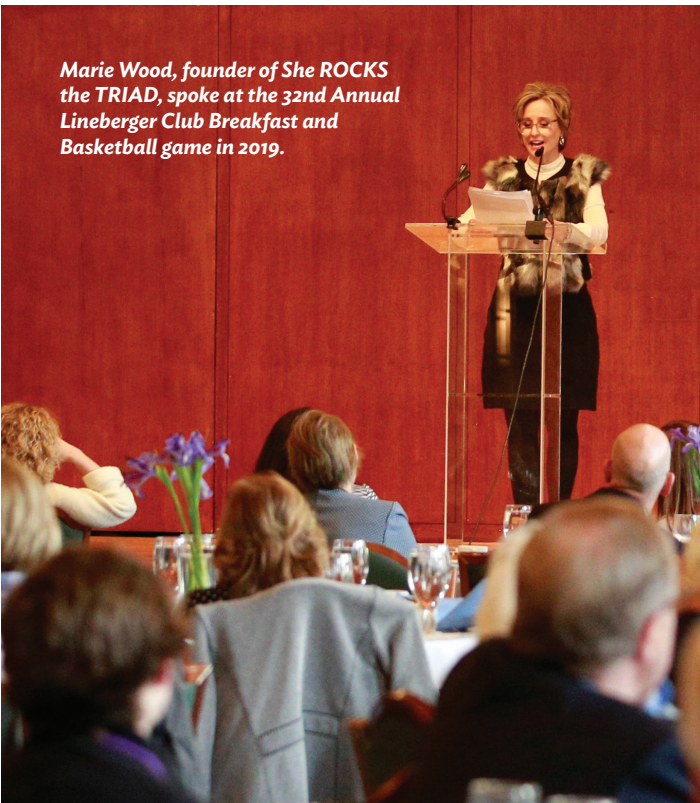
Another highlight of the event was the live auction, which saw a bidding war erupt on several items, including a UNC men's basketball banner with more than 200 signatures from former players and coaches and lunch with Williams at the end of the basketball season. 🐘



Left to right: UNC Lineberger's Paola Gehrig, MD, professor and director of gynecologic oncology, with Marie Wood and Emma Rossi, MD.



Marie Wood, founder of She ROCKS the TRIAD, spoke at the 32nd Annual Lineberger Club Breakfast and Basketball game in 2019.



UNC-Chapel Hill mascot Rameses greets a young fan at the Lineberger Club Breakfast and Basketball Game.



Lineberger Club features ovarian cancer survivor, advocate



While Marie Wood felt like she had just been to war, still, she was happy. After a diagnosis of ovarian cancer, surgery and six months of chemotherapy, the Greensboro resident, mother of four and successful interior designer learned her cancer was in remission.

Life was good. She had just wrapped up the holidays with her family at the end of 2017 when the call came in. Her cancer had returned.

“What I came to understand is, this cancer is a beast,” said Wood, speaking to nearly 200 people in February, 2019, at the 32nd Annual Lineberger Club Breakfast and Basketball Game, an event held at the Carolina Club as a show of appreciation for supporters who help make UNC Lineberger’s research possible.

Wood shared the story of her motivation to launch the Triad chapter of She ROCKS Inc., a Wilmington-based nonprofit that has raised more than \$600,000 for ovarian cancer research at UNC Lineberger.

“We so appreciate what you do,” said UNC Lineberger Director Shelley Earp, MD, who described the strides made in cancer prevention, basic science research and treatment at UNC Lineberger. He also recognized the center’s many supporters, including Pearl Schechter, who has attended all 32 Lineberger Club events. With her late husband, Sol Schechter, she helped launch a grant program that supports early-stage, novel research in order to bridge to larger grants.

“On behalf of our division, our moms, our sisters, our friends, and our daughters, I want to thank you for what you’re doing,” said UNC Lineberger’s Paola Gehrig, MD, professor and director of gynecologic oncology in the UNC School of Medicine. Important advances have been made in research, treatment, and care delivery, for ovarian cancer, the most lethal gynecologic disease in the United States, she said.

“We have more treatment options, and we have seen more improvements in the last five years, than we’ve seen in the previous 20,” Gehrig said. “It’s really incredible, and research has made that happen.”

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PAOLA GEHRIG, MD

While treatment can cause ovarian cancer to become like a chronic disease for some, that is not the case for everyone. Just 47 percent of women diagnosed with the disease in the United States survive five years, according to the National Cancer Institute. Wood’s cancer went into remission after four months of treatment in 2018, but it has relapsed again, and she is back in active treatment.





Wood has maintained a good perspective on her own cancer, but she said speaking with young women who had ovarian cancer that did not respond to treatment motivated her to seek change.

“After hearing about these cases, and these young women – I think that’s when I snapped ...,” Wood said.

Wood also wanted to raise awareness about ovarian cancer. She recalls being a healthy, active 51-year-old when she received the unexpected diagnosis in 2017.

“I knew all about cervical cancer, and breast cancer, and colon cancer and the signs and symptoms of those, but why not ovarian cancer?” she said.

Her search for an organization that could help her raise awareness and support for ovarian cancer research led her to She ROCKS Inc. Wood knew quickly that she wanted to be part of the group and its mission. She helped form a steering committee to launch the Triad chapter, and at the group’s inaugural event, they raised \$76,000.

Constellation Brands’ effort supports cancer patients in need

August in North Carolina can mean many things — back to school, sweltering heat, an end to a great summer — but for those who benefit from UNC Lineberger’s Comprehensive Cancer Support Program, it’s also a time of thanksgiving.

For the past nine years, Constellation Brands and Corona wholesalers and retailers across North Carolina have shown their support for the mission of the N.C. Cancer Hospital through the Corona Cares program, raising \$1.5 million from wholesalers, retailers and convenience stores.

Every August, this program donates 25 cents of every case of Corona Extra, Corona Light and Corona Premier sold and 100 percent of all donations from paper limes purchased at cash register checkouts to the N.C. Cancer Hospital and the Comprehensive Cancer Support Program or CCSP, a multidisciplinary program dedicated to helping patients, caregivers and families with cancer treatment, recovery and survivorship.

For many North Carolinians, the cost of cancer is often two-fold — medical care taking the lion’s share, and supportive care often falling by the wayside. Initiatives like CCSP offer ways to help fill the gaps for patients who are trying to make ends meet.

“In the cancer setting, if you’re fortunate enough to be insured, you get medications, surgery, your radiation covered to a certain degree, but even with insurance, the cost of cancer care is quite high,” said Donald Rosenstein, MD, director of the CCSP.

That’s where Corona Cares comes in. Ten years ago, Bill Marren, market manager at Constellation Brands, saw the success of Constellation’s national Corona Cares program and wanted to bring something similar to North Carolina. Around the same time, Long Beverage CEO Rodney Long lost his wife, Mary Anne, to cancer, and he was inspired to give back to the community.



“We created a spaceship to put a man on the moon and get him back home. We have sent a satellite to Saturn that sent back amazing photos of the moons that surround Saturn. I can’t begin to fully understand everything we have accomplished in space discovery...,” Wood said. “I believe man is smart enough to change the trajectory of cancer also. We already have made a huge difference in many types of cancer, but folks, there is a long way to go.”

Both Wood and Gehrig recognized the legacy of Beth Quinn, the late founder of She ROCKS. She died from ovarian cancer last year. Wood said Quinn believed with all of her heart that “someone will find a cure.”

“I challenge each of us to make a difference by using our energy, our voices and our resources to give back to this learning institute, and bring about changes, and in many cases, a cure for cancer,” Wood said. ♀



“[Long] wanted to continue her legacy, with a grassroots program that touched everyone in the state,” Marren said. “[Long] saw how the patient support program touched a lot of people in North Carolina and married the ideas of hospital care and supportive care. Corona Cares is the perfect program to raise money for that.”

With the funds raised through Corona Cares each August, Rosenstein and his team, including patient assistance coordinator Cindy Rogers, JD, are able to offer support to North Carolinians who travel long distances for chemotherapy appointments or who struggle not only with the cost of radiation but also utility bills and rent payments each month.

“In the cancer setting, if you’re fortunate enough to be insured, you get medications, surgery, your radiation covered to a certain degree, but even with insurance, the cost of cancer care is quite high.”

DONALD ROSENSTEIN, MD

“It makes it a little bit easier for patients to make it to their appointments if they don’t have to choose between a copay and their rent,” Rosenstein said. “We get so many people from all corners of the state, and what we’re able to do for those with limited resources is augment our clinical services here at the hospital. We wouldn’t be able to run the CCSP as well without these funds.” ♀



Donald Rosenstein, MD, left, director of the Comprehensive Cancer Support Program with Jim Ryan, senior vice president, corporate affairs for Constellation Brands, at the UNC Lineberger Blue Ribbon Gala event in 2018.

Community



Major gift, cancer survivors took center stage at the Blue Ribbon Gala

Left to right: W. G. Champion “Champ” Mitchell, UNC Lineberger’s Barbara Savoldo, MD, PhD, and Gianpietro Dotti, MD, Etteinne “ET” Mitchell, Katherine Shea, MD, and UNC Lineberger’s Thomas C. Shea, MD.



Coffee, conversation and cancer support

UNC Lineberger Board of Visitors member Ginger Finley, pictured, and Laura Bromhal held their annual Holiday Coffee event in December, 2018, raising funds for UNC Lineberger. This signature holiday event has raised more than \$25,000 over 26 years.



A family fundraising affair

Grayson, Sarah and Jack Clements held a fundraiser bake sale in January to raise money for UNC Lineberger in honor of Grayson’s friend, who had a bone marrow transplant at the N.C. Cancer Hospital. Their father, Kyle, offered to match anything they raised. The Clementses donated \$300 to UNC Lineberger.



Partnerships



Student athletes show they care

UNC Rowing held its annual Erg-A-Thon as a part of the Row for the Cure fundraiser. The student group raises funds for UNC Lineberger each year, and the team celebrated eight years of support in 2018.



Riding for a cure

Team UNC Lineberger partnered with local cancer centers at the Victory Ride to Cure Cancer, a cycling event that raises money for cancer research. Patient Jack Watson, above, was treated at UNC Lineberger, and his father's employer, Braswell Farms, is the presenting sponsor of the event.

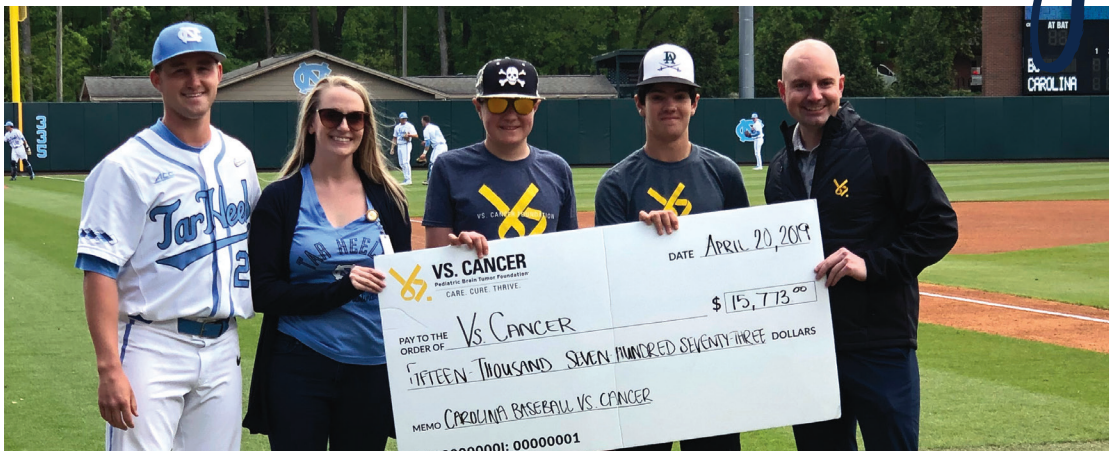


Annual golf tournament and party celebrate 21 years of support

The Polar Challenge golf tournament and Polar Party were held in March, 2019. Proceeds benefit Dina's Dynasty Ovarian Cancer Fund, which supports ovarian cancer research at UNC Lineberger.



Community



Team challenge fundraiser raises more than \$79,000

The UNC baseball team presented Vs. Cancer with a \$15,773 check to support pediatric brain cancer research and care at UNC Lineberger and other hospitals. Local sports teams raised more than \$79,000 for the effort.



Pedal for Peds event honors pediatric cancer patients, families

The annual Pedal for Peds Bike Ride was held at UNC Wellness Center in Cary, North Carolina. The event included the opportunity to bike on the American Tobacco Trail, ride a stationary bike or practice yoga to support UNC Lineberger.



Grateful patient gives back to support ovarian cancer research

Cindy Carroll held Curated 4 Ovarian Cancer in 2018, a gala evening fundraiser. Carroll's event was a way to give back and say thank you to her oncologist Linda Van Le, MD, and everyone at the N.C. Cancer Hospital.



Partnerships



Run supports loved one, others with cancer

The 8th annual Blue Ribbon Run, held in March in Wilmington, North Carolina, was dedicated to the memory of Bland Gillikin who suffered from colon cancer. All proceeds benefit colon cancer research, and help local families affected by colon cancer.



Wear your support with pride

UNC Lineberger has partnered with Peter Millar to raise awareness through branded golf wear. The blue ribbon Tar Heel logo helps raise awareness, and Peter Millar will donate a portion of the sales of logo items to support patient care and research.



Derby Day event supports patient programs

A Derby and Dancing fundraiser was held May 4 by UNC Lineberger supporters Ian and Lucy Falk and Lee and Chris Harris. The event raised more than \$18,000, and proceeds went to support UNC Lineberger's Comprehensive Cancer Support Program.



Blue Ribbon Partners

We thank the following Blue Ribbon Partners — who host events benefitting the cancer center, raising at least \$20,000 during a three-year period.

Blue Ribbon Run
Bobby F. Garret Benefit Concert
Corona Cares
John R. Isner
Pedal for Peds
River Landing Golf Association for Ladies “Swing for the Cure”
She ROCKS
Sports Endeavors
The Farm Party
Vs. Cancer Foundation/Pediatric Brain Tumor Foundation
Glasshalfull
HPW Pig Out for the Cure
UNC Women’s Rowing Team Ergathon

We would also like to thank the following volunteers and organizations who hosted an event last year that raised at least \$20,000.

Curated 4 Ovarian Cancer
Derby and Dancing
Polar Challenge Golf Tournament
V Foundation’s Victory Ride to Cure Cancer



2018-19 UNC Lineberger Board of Visitors

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| Doug and Lee Anderson | Jimbo and Lorraine Harrell | Joyce Pope |
| Jack and Nancy Andrews | John and Pat Hatcher | Rich and Marilyn Preyer |
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| Carl and Julia Fox | Marty and Ann Murphy | Ken and Cheryl Williams |
| Claudia Fuerst | Patrick and Carol Nash | Teresa Williams |
| Lee Garrett | Fountain and Carmen Odom | Brad and Carole Wilson |
| Joan Gillings | Neal and Helene O'Neal | John and Anne Wilson |
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| Tommy Hall | Josie Patton | |
| Alice Harney | | |

*deceased



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Elizabeth Rubio
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Bill Schaller
Director of Communications and Marketing

Taylor Zimmerman
Development and Communications Associate





UNC Lineberger director Shelley Earp, MD, with Board of Visitors member Pearl Schechter. Schechter celebrated her 100th birthday at a recent Board of Visitors meeting.



LINEBERGER COMPREHENSIVE
CANCER CENTER

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Left to right: Ethan Goldstein, Avery Goldstein and Jack Goldstein. Jack, 14, and his family had to make sacrifices when he was diagnosed with leukemia. But when Jack put his schoolwork and baseball training on hold, his family and friends were there to support him, first emotionally, and then by helping raise funds for UNC Lineberger, where he was treated for cancer.