

cancerlines

UNC LINEBERGER COMPREHENSIVE CANCER CENTER

Gala features major gift, cancer survivors

Biennial celebration brings patients, doctors and supporters together

UNC Lineberger's Blue Ribbon Gala Oct. 26 attracted many of the cancer center's most generous supporters, its faculty and its patients. In addition to black-tie clad guests and luminaries, hope was also in attendance that evening.

Hope was seen in the faces of cancer survivors and their families as they shared their aspirations for the future. In video messages, doctors and researchers said hope was a driving force behind their work. And hope was what spurred donors to support both UNC Lineberger and the patients it serves. It was truly a night to celebrate today's best care and tomorrow's best hope.

WRAL's Allen Mask, MD, was the evening's emcee. Joining him was a lineup of speakers, including H. Shelton Earp, MD, director of UNC Lineberger and the Lineberger Professor of Cancer Research; Robert Blouin, PharmD, UNC provost; David Routh, UNC vice chancellor of development; Lisa Carey, MD, The Richardson and Marilyn Jacobs Preyer Distinguished Professor of Breast Cancer Research; Hyman Muss, MD, The Mary Jones Hudson Distinguished Professor in Geriatric Oncology; and Thomas Shea, MD, The John William Pope Distinguished Professor in Cancer Research.

The gala celebrated UNC Lineberger's commitment to offering



Left to right: Alex Werden, UNC Women's Basketball Coach Sylvia Hatchell and Stuart Gold, MD, attended the Blue Ribbon Gala on Oct. 26 at the Carolina Club in Chapel Hill.

today's best care and tomorrow's best hope and featured award presentations and one notable announcement.

Etteinne "ET" and W. G. Champion "Champ" Mitchell of New Bern, North Carolina, drew hearty applause and cheers when it was announced they were donating \$10 million to create a fund supporting ground-breaking research in blood cancer at UNC Lineberger.

Blouin spoke about how research at UNC Lineberger is leading to better treatments that improve a patient's chance to beat cancer. "When I think about the role that Lineberger plays,

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Grateful patient gives \$10 million for blood cancer fund



Left to right: UNC Chancellor Carol Folt, W.G. Champion "Champ" Mitchell and Etteinne "ET" Mitchell.

Beating cancer is gift enough for most people, but for Etteinne "ET" and W. G. Champion "Champ" Mitchell of New Bern, North Carolina, they wanted something that went beyond themselves and would benefit both the people of North Carolina and the institution. Champ credits with saving his life.

To show their gratitude and appreciation, the Mitchells donated \$10 million to create a fund supporting ground-breaking research in blood cancer at UNC Lineberger, including lymphoma, leukemia and myeloma.

"Champ and ET Mitchell have made an investment that will greatly advance our ability to conduct laboratory and clinical investigations into the underlying mechanisms that make blood cancers so challenging to cure," said H. Shelton Earp, MD, director of UNC Lineberger and the Lineberger Professor of Cancer Research. "Our cellular immunotherapy studies have had notable success in treating some blood cancers, but these are a complex group of cancers that likely will require a number of treatment options – many of which

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"What our gift buys is hope. That's what we need. Eventually that hope will become a cure, and that's the goal."

- Etteinne "ET" Mitchell

the inside lineup



3 Blending technology, genomics to tackle cancer



4 Couple offers matching gift to spur support



7 Improving rare pediatric cancer outcomes



8 Fast Break raises more than \$2.7 M for cancer research



H. Shelton Earp, MD

director's message

One of the true joys of leading UNC Lineberger Comprehensive Cancer Center is having the opportunity to share – and even politely brag – about our wonderful faculty and staff and their achievements.

I recently spoke about the current state of the cancer center at UNC Lineberger's annual scientific retreat. To briefly summarize my message, our cancer center is extremely healthy,

and there is an exceptional level of science taking place. This is due in part to our ability to draw our faculty from the entire university. We have a terrific basic science group, our population scientists are national leaders, and we conduct novel clinical trials. This is all in the context of delivering compassionate, patient- and family-centered care; care that is second to none. Our cancer research and care are making an impact, not just in the Southeastern United States, but across the nation.

I also relayed the importance of the N.C. Cancer Hospital opening in 2009; it was a major milestone for our cancer center and North Carolina. In nine short years, we have gone from serving 2,500 patients to more than 7,500 new patients a year. This is a testament to our faculty and staff and their commitment to providing high-quality, innovative, patient-friendly care and to the outstanding community support for our research and treatment programs.

In this edition of Cancer Lines, you'll learn about notable achievements in our community projects, labs and clinics. You'll also read about some truly generous gifts that will have meaningful and long-lasting impacts on how we conduct research and provide care, including a \$10 million donation from Etteinne "ET" and W. G. Champion "Champ" Mitchell of New Bern, North Carolina, to fund blood cancer research. Their gift announcement at our Blue Ribbon Gala made a wonderful event even more special.

Support from our donors and from the state allows us to recruit and retain highly accomplished faculty members. This was especially true in the areas of surgical oncology, radiation oncology, pediatric oncology and cancer outcomes research this past year. On page 4, we are featuring one of our recent recruits, Hector Franco, PhD, and his work focused on the use of bioinformatics to better understand and sequence the genomes of cancer patients. We hope you also take some time to read about a few of the national honors and awards recently presented to our physicians and scientists.

I know the future holds great things for UNC Lineberger. Our goal is to ensure that our research and care continues to improve the lives of those impacted by cancer in North Carolina, while striving toward cancer prevention and early detection. I appreciate your dedication to our mission and look forward to this opportunity to share with all of you what makes our cancer center great for patients, physicians, researchers and the entire community. 8



Chemo-Kaze Dragons, a group of local cancer survivors who race dragon boats, recently attended a reception for the Carolina Breast Cancer Study.

Carolina Breast Cancer Study celebrates milestone

The Carolina Breast Cancer Study, UNC Lineberger's landmark population-based study of breast cancer risk, behavior and outcomes that focuses on young and African-American women in North Carolina, recently celebrated the 10-year anniversary of its third phase.

The study's leadership hosted events this fall in Concord, Greenville and Cary to bring together and recognize the contributions of the study's participants and their caregivers. Between 2008 and 2013, the study enrolled 3,000 participants shortly after their breast cancer diagnosis, and they have been followed for up to 10 years to capture information about additional treatments and outcomes.

The receptions featured presentations on a range of topics, including breast cancer

advocacy, self-care and stress management, an "ask the expert" question and answer session, and resource tables from community and health care organizations.

The Carolina Breast Cancer Study originally opened in 1993 to investigate the causes of breast cancer in black and white women in North Carolina, and today it is one of the largest African-American breast cancer databases in the United States. The study, supported in part by the University Cancer Research Fund and Susan G. Komen, has generated many key insights into how breast cancers can affect women differently based on their age and race, and findings that have led to new, more targeted treatments for these different types of breast cancers. 8

Gala *continued from page 1*

I always have in the back of my mind that someone out there is waiting for that next cure. And what Lineberger offers the people of North Carolina and beyond is the opportunity to have that cure."

Earp discussed the importance of focusing on both science and patient care, which is a point of pride for UNC Lineberger. "While research is the pathway to cures for cancer, we offer hope every day by providing that care to each and every patient as compassionately as we can."

That compassionate spirit is alive and well in UNC Lineberger supporters, including Drew and Tammy Woerner, who are also cancer survivors. The Woerners support the Patient and Family Resource Center, which was important to Drew Woerner's father, Otto, who started the fund the Woerners maintain.

"[My father] didn't want anybody who needed health care to go without it," Drew Woerner said. "Tammy and I have continued to give a little bit every year so people don't need to worry about getting

groceries or getting chemo. We know when you walk into the cancer center, it doesn't matter if you're a doctor, a nurse or a housekeeper, you'll get fantastic care."

The John William Pope Foundation, along with foundation chairman Art Pope and UNC Lineberger Board of Visitors member Joyce Pope, was also recognized for a \$5 million gift for The John William Pope "Tomorrow's Best Hope" Endowed Fellowship Fund.

"When we made the decision to support cancer research and treatment, my father challenged us to give where it would make the most difference. We came to the conclusion that the best place to invest was right here at Lineberger," Art Pope said.

The Breast Cancer Research Foundation was also honored for its contributions to UNC Lineberger over the years, with grant totals surpassing \$10 million.

Hope was most evident through the words and presence of several cancer survivors. Rengate Alston spoke about waking up each day feeling grateful. He

sends motivational text messages to help spread the hope he feels on a daily basis. "I am grateful for what they do," he said of the team at UNC Lineberger.

Lanier Swann Hodgson spoke about her role at the School of Medicine and the two children she had after surviving cancer. "I hold two babies when I go home at night because you choose to support our cancer center."

Alex Werden shared his cancer journey, which began as a cadet at West Point and ended with his successful treatment at UNC Lineberger. He was able to return to West Point, graduate and earn a medical waiver that allowed him to commission as an officer in the U. S. Army. "Cancer, while being a setback, also opened up new doors I never thought would be open," he said.

Fifteen-year-old Ashley Burnette conveyed the spirit of optimism and gratitude felt by the entire crowd when she spoke the following words: "UNC Lineberger is what cured me. The fact that I was able to call this place my home is just a blessing." 8

Scientist blends tech and genomics to tackle cancer



Left to right: Graduate student Mike Kelly, computational biologist Raul Mendez-Giraldez, PhD, and Hector Franco, PhD, in the Franco Lab.

Human genome exploration at regulatory level may lead to better treatment opportunities for cancer patients

When he was a young man growing up in Puerto Rico, UNC Lineberger's Hector L. Franco, PhD, was inspired by the island's natural setting and thought he would continue to explore that environment with a career in marine biology. But attending college in Florida changed that trajectory, leading him to discover genetics and shift his focus to molecular biology and bioinformatics as he pursued his undergraduate and doctoral degrees.

Franco, 35, earned his doctorate in biochemistry and molecular genetics from the University of Puerto Rico Medical School and was an American Cancer Society Postdoctoral Fellow at University of Texas Southwestern Medical Center. He joined the UNC School of Medicine faculty in 2017 as an assistant professor of genetics.

"Lineberger was a place where I felt the success of the young faculty was important to the leadership, and there was a tenable collegiality among all faculty," he said. "There was a real focus on the success of the individual."

Franco's lab combines state-of-the-art molecular and cellular techniques with genomic and computational approaches to study the human genome. "We are particularly interested in the regulation of gene expression, to see if we can turn off genes that give rise to breast and ovarian tumors," he said.

Taking advantage of modern computer technology, Franco and his colleagues use bioinformatics and machine learning to analyze the molecular characteristics of tumors extracted at the N.C. Cancer Hospital, the clinical arm of UNC Lineberger, to understand the genetic pathways that give rise to cancer.

"Through our science, we can find new avenues for therapeutic intervention by focusing on the regulatory regions of the genome," Franco said.

Franco and his team are targeting the epigenome and the chemical compounds that regulate gene activity within the genome. Franco said this approach may give rise to better treatments down the line by exploring the regulatory areas of the genome, instead of just targeting the genes themselves.

"Innovation is driven by diversity."

- Hector Franco, PhD

Franco's research recently led to a Department of Defense grant award to perform single-cell genomics of breast cancer patients. He also is a co-leader with H. Shelton Earp, MD, director of UNC Lineberger and the Lineberger Professor of Cancer Research, and Charles M. Perou, PhD, the May Goldman Shaw Distinguished Professor of Molecular Oncology and professor of Genetics and Pathology & Laboratory Medicine, on a breast cancer SPORE grant, funded by the National Cancer Institute, that will allow the scientists to explore everything from basic science to epidemiological studies to clinical trials of breast tumors.

"I just really enjoy pursuing new discoveries and tackling unknown questions about the human genome," Franco said. "Every day with my team, I get to pursue unknown questions about cancer."

Franco is also part of the Simmons Scholars Program,



Hector Franco, PhD

which was founded in 1994 by former Dean Michael Simmons, MD, and provides three to five years of salary support, structured mentorship, and career and leadership development opportunities for minority populations in the medical field.

"I want to be a role model for minorities, showing that becoming a scientist at a leading institution is possible for anyone, and that a team of any kind, sports or research, is better if it's diverse," he said. "Innovation is driven by diversity." 

Family, community drive couple's desire to give back

A love of family and the entire Carolina community are behind a Tarboro couple's \$100,000 donation as part of a matching gift campaign for UNC Lineberger.

As Carolina graduates from a long line of Tar Heels, the Andersons said they always want to support their alma mater, as well as affiliated institutions like UNC Lineberger. Their decision to give was also based on personal experiences with cancer, which affected Ben Anderson directly, as well as parents and siblings of the couple.

Kitty Anderson said the experience her sister had at UNC Lineberger was a good one, despite a sad outcome, and helped encourage her to join the Board of Visitors with her husband, Ben.

"I feel like I'm doing a good community service," Kitty Anderson said. "I'm here for what they need. Lineberger has been the best at helping people get to where they need to be."

Ben Anderson experienced first-hand how the cancer center helps people after being diagnosed with the disease. "It's the doctors at Lineberger that make it such a special place. The doctors are not arrogant but are confident in their abilities. They're striving for one goal, which is that they feel they'll find a cure for cancer. I get that feeling every time I talk to one of the doctors. That's why we're so committed to UNC Lineberger."

As members of the Board of Visitors, the Andersons said they enjoy hearing doctors and researchers present on their latest findings at meetings and events. They said they are also interested in seeing where the next phase of cancer research will go.

"Losing a father to cancer, and losing siblings to cancer have had a profound effect on Kitty and how she feels that cancer research should be done. And this will benefit our children and grandchildren," Ben Anderson said of their gift.

"We're little people in a big, big pond, and we give small amounts here and there to various things, but we felt like we needed to choose one thing to do our major giving to beyond our church," Kitty Anderson said. "It's why we continue to give. Every gift we've given, we planned out and made the decision together."

"It's the doctors at Lineberger that make it such a special place. The doctors are not arrogant but are confident in their abilities, and they're striving for one goal, which is that they feel they'll find a cure for cancer. I get that feeling every time I talk to one of the doctors. That's why we're so committed to UNC Lineberger."

- Ben Anderson, UNC Lineberger Board of Visitors member



Ben and Kitty Anderson

The Andersons are also appreciative of the fact that UNC Lineberger is the only public comprehensive cancer center in North Carolina and said they are confident that the donation and any matching funds raised will be put to good use.

The matching gift campaign continues through the end of the year, and every dollar raised, up to \$100,000, will be matched, dollar for dollar. To make a gift before Dec. 31, please visit unclineberger.org/match. 

Gift *continued from page 1*

have not yet been discovered. This gift will jump-start innovation and discovery."

"This is a very special place," Champ Mitchell said. "I know about it because I got to know it first-hand. I have cancer, and I came here. I had stage 4 lymphoma in more than 10 sites. The prognosis wasn't that great, but Tom Shea and the team here did a wonderful job."

After treatment, the Mitchells spent some time considering their options for a gift. They explored the scientific avenues and couldn't decide what the best approach should be. But ET Mitchell said she knew what to do after a chance encounter led the couple to take action, finding out a local businessman had a 2-year-old with cancer, but his outlook remained optimistic.

"He said 'it's going to be OK. We're going to Lineberger.' I came home that day and said 'Handsome, we've done enough talking. Let's roll,'" she said.

As a native North Carolinian, Champ Mitchell said he was even more compelled to help people in this state who have cancer or are seeking treatment for cancer.

"Every day, 151 fellow North Carolinians learn they're facing a daunting battle against a deadly disease.

And I know from personal experience, it's not a fight you can or should do alone," he said. "Between the support of my family and an innovative, caring team of physicians and researchers led by Dr. Shea at the North Carolina Cancer Hospital and UNC Lineberger, we fought my battle together. Today, my battle is won, but so many others need partners to fight with them. ET and I believe our gift can help the UNC Lineberger team bring all of us closer to a cure than ever before."

"What our gift buys is hope," ET Mitchell said. "That's what we need. Eventually that hope will become a cure, and that's the goal." 



H. Shelton Earp, MD, left, and David Routh, UNC chancellor for development, right, present Champ and ET Mitchell, center, with a custom textile piece by artist Elaine O'Neil.

Study shows potential for therapies

Findings from a UNC Lineberger study could help predict which advanced prostate cancers will develop a key driver of resistance – a discovery that could lead to new therapeutic strategies.

In the journal *Molecular Cell*, researchers described the role of a protein variant called androgen receptor variant 7 (AR-V7), an alternative form of the androgen receptor that plays a key role in prostate cancer development and treatment. While scientists have known about AR-V7 as a driver of resistance, the new study revealed previously unknown mechanisms of action for it, including assisting in cancerous growth.

According to **G. Greg Wang, PhD**, and **H. Shelton Earp, MD**, the findings revealed a new set of genes activated by the receptor, as well as a new set of partner proteins and downstream targets that could result in new therapies.



Wang



Earp

Stem cells could aid drug delivery

The latest in a series of laboratory breakthroughs by UNC Lineberger researchers could lead to a more effective way to treat medulloblastoma, the most common brain cancer in children.

In a study published in *PLOS ONE*, **Shawn Hingtgen, PhD**, and his collaborators showed they could shrink tumors in laboratory models using cancer-hunting stem cells, developed from skin cells, as a drug delivery tool.

The technology is an extension of a discovery that won researchers a Nobel Prize in 2012, in which scientists showed they “flip” skin cells into stem cells. Hingtgen and his team built on that finding to show that stem cells naturally target tumors. Their latest study was a necessary step toward clinical trials.

“If we could use this strategy to eliminate or reduce the amount of chemotherapy or radiation that patients receive, there could be quality of life benefits,” Hingtgen said.



Hingtgen

Mailed tests boost colorectal screening

Researchers with UNC Lineberger’s Carolina Cancer Screening Initiative are on a mission to boost colorectal cancer screening. In a collaboration with the Mecklenburg County Health Department in Charlotte, they tested a new way to increase screening in an under-served group.

Colorectal cancer is third most common type of cancer in the United States and the second leading cause of cancer death. While screening has proven

effective in reducing cancer deaths, researchers reported too few people are getting screened, and low-income populations are screened at even lower rates.

Alison Brenner, PhD, MPH, and **Stephanie Wheeler, PhD, MPH**, examined the impact of targeted outreach to more than 2,100 people insured by Medicaid who were not up to date with colorectal cancer screening. They directly mailed fecal immunochemical tests that can detect blood in the stool – a symptom of colon cancer – to some patients, and mailed reminders and appointment information to the others.

Twenty-one percent of patients who received the tests in the mail ended up getting screened, which was nine percentage points higher than the rate of people who received reminders, according to the study in the journal *Cancer*.



Brenner



Wheeler

Higher BMI linked to lower cancer risk

An analysis co-led by **Hazel B. Nichols, PhD**, linked higher body mass index to lower breast cancer risk for younger women. The study showed a need to better understand the factors that lead to breast cancer risk in this age group.

Breast cancer is more common in older women, and studies have linked obesity as a risk factor for breast cancer after menopause. Since breast cancer is less common in younger women, researchers pooled data from 19 different studies to investigate breast cancer risk for a group of 758,592 women who were younger than 55.

UNC Lineberger researchers found in their analysis that a higher body mass index, or BMI, was linked to lower breast cancer risk for younger women across this age group, even for women within a normal weight range.

“We saw a trend where, as BMI went up, cancer risk went down,” Nichols said.



Nichols

HPV blood test shows promise

A new blood test developed by UNC Lineberger researchers shows promise for tracking HPV-linked head and neck cancer patients after treatment.

Infection with certain strains of human papillomavirus, or HPV, is linked to multiple cancers, including cancer of the oropharynx. The Centers for Disease Control and Prevention estimated that approximately 70 percent of oropharyngeal cancer cases diagnosed in the United States are probably caused by HPV, which accounts for nearly 13,000 cases per year.

Gaorav Gupta, MD, PhD, and his colleagues developed a blood test that can detect fragments of HPV’s genetic material that have been released into the blood by dying cancer cells.

Researchers followed 89 patients with HPV-associated oropharyngeal squamous cell carcinoma, finding that they could effectively track patients using the blood test to see whether they remained cancer-free or if they had recurrence of their cancer.

“The most striking finding of our study is that of the patients who did not have any signal using our blood test, none of them developed disease recurrence,” said

Bhishamjit S. Chera, MD.

“This blood test could spare patients the need for additional imaging and potentially alleviate some anxiety.”



Gupta



Chera

Researchers plan pipeline of studies

UNC Lineberger researchers are expanding an effort to harness the immune system to fight cancer with the development of new investigational treatments that use a patient’s own white blood cells to recognize and destroy their disease.

While chemotherapy, surgery and radiation have been the three “pillars” of cancer treatment, UNC Lineberger Director H. Shelton Earp, MD, said immunotherapy – in which the immune system is primed to attack cancer cells – has emerged as the fourth.

Since cancers come from the patient’s own cells, a person’s cancer cells can pass by the immune system unnoticed. In addition, the tumor cells themselves can secrete agents that surround the tumor with an environment that suppresses the immune response. Researchers are developing a strategy to harvest the patient’s immune cells and change them so they can seek and destroy cancers using markers on their cell surface unique to the cancer. They genetically engineer a type of white blood cell, called T-cells, to recognize cancer cells with specific markers on their surface. These modified cells are known as chimeric antigen receptor T-cells, CAR-T cells.

The UNC Lineberger team has launched studies into whether they can use CAR-T cells to fight Hodgkin lymphoma and non-Hodgkin lymphoma that express a surface marker called CD30. Now, additional studies are planned to use this method to treat other cancers, including multiple myeloma, neuroblastoma, glioblastoma and ovarian cancer. Researchers are also working on strategies to make these powerful treatments safer. 8



Earp

Hyundai grant offers hope to young patients



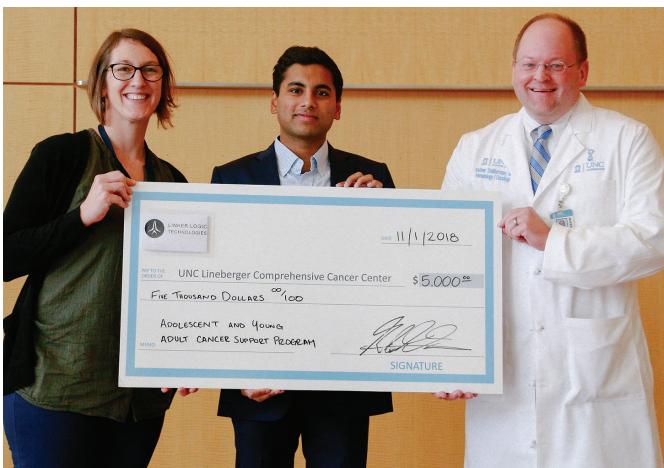
Thomas Alexander, MD, MPH

Hyundai Hope on Wheels presented a \$100,000 Impact Grant to Thomas Alexander, MD, MPH, in July. For the past 20 years, Hyundai Motor America and its U.S. dealers have directed a portion of proceeds from every Hyundai sold in the U.S. to support pediatric cancer research through the Hyundai Hope on Wheels program.

Stuart Gold, MD, chief of pediatric hematology/oncology at N.C. Cancer Hospital, said pediatric cancer funding like this allows for better treatments and improved survival rates.

Hyundai's Hope on Wheels program has provided UNC Lineberger with \$700,000 in research support since 2011. It previously awarded UNC Lineberger member Ian Davis, MD, PhD, two grants totaling \$350,000, and last year it presented a \$250,000 grant to Barbara Savoldo, MD, PhD.

Matching gift raises more than \$15,000



Lauren Lux, LCSW, Linker Logic's Ritwik Pavan and Andrew Smitherman, MD.

A \$5,000 matching gift challenge from Linker Logic Technologies raised a total of \$15,152 to benefit the Adolescent and Young Adult Cancer Support Program at UNC Lineberger. UNC student, company founder and CEO Ritwik Pavan issued the challenge to encourage others to help the AYA Program.

More than 300 donors supported the effort, and program director Lauren Lux, LCSW, said the funds raised will help increase patients' quality of life during treatment. "We plan to start providing massage and music therapy to our inpatients in the next few months. We also offer room decorations for our patients who will be inpatient for extended periods of time. Additionally, these funds will be used to help support cutting-edge research."

Corona Cares benefits patient programs

Throughout the month of August, Constellation Brands and all Corona wholesalers across North Carolina supported the mission of the N.C. Cancer Hospital through its Corona Cares program, raising \$241,000 from wholesalers, retailers and convenience stores.

This program donated 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. Donations benefitted the Comprehensive Cancer Support Program, a multidisciplinary program dedicated to helping patients, caregivers and families with cancer treatment, recovery and survivorship.

Pedal for Peds aids pediatric cancer efforts



Pedal for Peds was held Sept. 29 at UNC Wellness Center in Cary, North Carolina.

The UNC Division of Pediatric Hematology Oncology held its annual Pedal for Peds Bike Ride on Sept. 29 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 all to support UNC Lineberger. Funds raised go to support the mission to care for and cure all children with cancer and blood disorders in North Carolina.

The day also featured a celebration to remember past patients and honor survivors. The event was started by Julie Blatt, MD, and her team to help patients with cancer and their families.

Community event raises money, support

A charity fundraising effort raised money and awareness through sponsorships and sales of barbecue plates from Gillis's BBQ.

Coordinated by agents of the Chapel Hill and Pittsboro offices of Coldwell Banker Howard Perry and Walston in conjunction with the HPW Foundation, Pig Out for the Cure was held Oct. 12. Local businesses showed their support by sponsoring the event and raising funds for UNC Lineberger.

Local businesses give back to research

The local community supports UNC Lineberger through partnerships with several businesses.

- CoolSweats at the Beach – Comprehensive Cancer Support Program in July.
- J. McLaughlin – Breast Cancer Clinical Fund, October.
- SallyMack – Comprehensive Cancer Support Program in October.
- Glasshalfull – 10 percent of sales every Tuesday go to where the need is greatest.
- Chapel Hill Toffee – Dina's Dynasty fund to support ovarian cancer research and care. 

Honors and Awards

Honors

Victoria Bae-Jump, MD, PhD, was recognized by the NCI, highlighting her research into delineating the impact of obesity and diabetes on the underlying biology of endometrial cancer.

Lisa A. Carey, MD, was appointed to the Susan G. Komen Scientific Advisory Board.

Blossom Damania, PhD, was named a fellow by the American Association for the Advancement of Science.

Paul A. Dayton, PhD, was inducted into the American Institute for Medical Engineering College of Fellows.

Jack Griffith, PhD, was elected into the National Academy of the Sciences.

Deborah K. Mayer, PhD, RN, AOCN, FAAN, was appointed interim director of the National Cancer Institute's Office of Cancer Survivorship.

Matthew Milowsky, MD, was elected co-chair of the Bladder Cancer Task Force of the National Cancer Institute's Genitourinary Cancers Steering Committee.

Donald Rosenstein, MD, was elected president of the American Psychosocial Oncology Society.

Awards

Ron Chen, MD, MPH, \$11.9 million PCORI award.

Gianpietro Dotti, MD, \$100,000 grant from the Mary Kay Foundation to conduct research into the use of cellular immunotherapy.

Daniel Reuland, MD, \$5.5 million NCI award.

Kurt Ribisl, PhD, \$11.6 million NCI award.

Angie Smith, MD, \$8.5 million PCORI award.

Andy Wang, MD, \$2.09 million UNC System Research Opportunities Initiative award.

Patient, doctor connect through rare cancer diagnosis

Cancer changed Lily Newton's life in more ways than she could have imagined. In March of 2011, when she was 14, Lily was diagnosed with Ewing sarcoma, a rare cancer of the bone and soft tissue.

Fears and questions quickly replaced thoughts of preseason lacrosse practice, catching up with friends at school, watching the science-fiction TV drama "Doctor Who," and starting her freshman year of high school. But looking back at her diagnosis and treatment, Newton said cancer played a part in becoming who she is.

As she sat in a waiting room of the N.C. Cancer Hospital, in remission and waiting on a checkup, Newton expressed gratitude to her doctor, Ian Davis, MD, PhD, a physician-researcher at UNC Lineberger who studies Ewing sarcoma. She said her cancer diagnosis had a role in getting her to where she is today – pursuing her dream of a career in film or television production. Now she's 22, living in New York City and will graduate in the spring from one of the top film schools in the country.

"It is a horrible, horrible thing that I got out of relatively unscathed," she said. "But it led me down this path that I'm going down now."

A life-changing phone call

Newton was in eighth grade in Chapel Hill at the time of her diagnosis. She had a persistent pain in her hip. At the worst, her mom thought it might be an infection. But while riding in the car with her mom, they got a call that turned her life upside down; a scan found a tumor in Newton's pelvis.

Within five days of the call, Newton was meeting with Davis at the N.C. Cancer Hospital.

"It was horrible, because the first thing you think of is that you're going to lose your child," said Newton's mom MaryKate Cunningham. "But we learned a lot, especially from Dr. Davis, about how much more likely it is for kids now to survive a cancer diagnosis than we would have imagined years ago, and we really liked him and trusted him."

Cunningham said the fact that Davis both treats patients with Ewing sarcoma and researches the disease, gave them the confidence to have Davis care for her daughter.

"Not only was he a really nice doctor who we



Ian Davis, MD, PhD, and patient Lily Newton.

trusted, but his research specialty was exactly the type of cancer that Lily had," Cunningham said.

Newton's treatment started almost immediately with chemotherapy and radiation. Her prognosis was good. Still, Newton faced tough decisions, such as whether to have a surgery that could impact her ability to walk normally. It also was uncertain if she would face long-term treatment side effects.

Being at the hospital or in the clinic became part of Newton's life. If she had a fever or developed an infection, she was hospitalized. Her family kept a bag packed in case her temperature spiked above 101 degrees. She became friends with the doctors and nurses. That made long hospital stays easier, but it was still difficult.

"It was hard being ripped out of my normal life," she said.

Davis said Newton was remarkable. She stayed enrolled in school throughout treatment, took a serious course load, including Latin and Advanced Placement classes, and kept a positive attitude.

It was about a year after diagnosis that a scan revealed that there was no evidence of disease. It was

a definite high point, Cunningham said. Newton now returns to see Davis annually.

"I can't imagine her having gotten care from anybody else," Cunningham said, expressing her gratitude for Davis and the care team.

Another high point came after Newton finished treatment. The Make-A-Wish Foundation arranged for her and her family to tour the movie set of "The Hobbit" in New Zealand. It was a dream come true. "It was such a fun set to be on because it was so massive and fantastical," she said. "Everything about it seemed romantic to me."

Newton said cancer has affected her in many ways, including helping shape her life direction. Her dad works in film and television production, and she knew she always wanted to do something creative with her life and career. But being on that movie set helped to cement her ambitions, and she is now studying at New York University's Tisch School of the Arts. She spends most of her time working on school projects, and when time permits, trying to find \$1 pizza in New York. She is looking forward to graduating in May. [8](#)

Making research strides

In the lab, Ian Davis, MD, PhD, investigates why Ewing sarcoma occurs more commonly in children and young adults.

Scientists have known that most people with Ewing sarcoma have a mutation in their tumors that creates an entirely new gene, EWSR1-FLI1. The gene makes a protein that is central to the development of the cancer in bone or soft tissue. But according to Davis' research, this cancer-forming protein doesn't work alone.

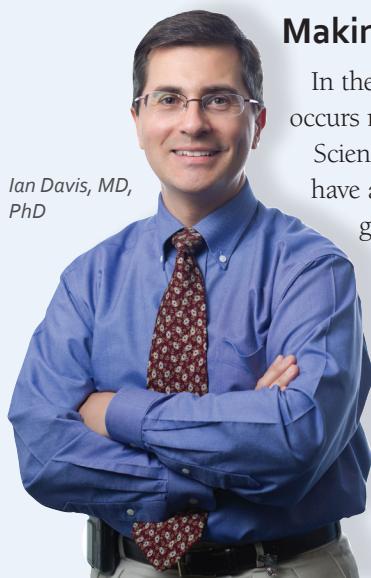
He and his collaborators discovered there are specific "states" of DNA that are susceptible to the protein's attack. They believe that undeveloped stem cells have a similar structure to Ewing sarcoma cells that makes them vulnerable to the protein's ability to lead to cancer.

"When the right mutation occurs in the right cell type, you get this unfortunate convergence of events, and that's what causes Ewing sarcoma," Davis said.

Davis created a tool to screen drug candidates for the disease, which is sorely needed as current clinical treatments are associated with toxic side effects.

"The impact of these diseases and treatments on children and their families is profound," Davis said. "This appreciation gives me a special drive to tackle studies in the lab that help to further our understanding of these diseases, and to use that information to try to advance treatments."

"I don't think there is going to be one magical [solution], and one day this disease has a cure," Lily Newton said. "From my understanding, it will be lots of little steps and discoveries that will lead to something. I'm glad there is money and energy going into research for this specific cancer, which is a rare one." [8](#)



Ian Davis, MD, PhD

calendar of events

February

9th Lineberger Club, Carolina Club, Chapel Hill

April

5th Board of Visitors Spring Meeting, The Friday Center, Chapel Hill

May

18th Victory Ride for Cancer, Raleigh

For more information about these events and other UNC Lineberger news, visit www.unclineberger.org, or follow us on [f](#) [t](#)



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Jones Angell and UNC Men's Basketball Coach Roy Williams encourage bidding at the 14th annual Roy Williams' Fast Break Against Cancer on Sept. 25.

Fast Break raises funds, awareness

The 14th annual Roy Williams' Fast Break Against Cancer, held Sept. 25 on the Roy Williams Court at the Dean Smith Center, raised more than \$270,000 this year and more than \$2.7 million to date.

"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 to pancreatic cancer four years ago, and he and his wife would be contributing to the HJ Kim Distinguished Professorship Fund in his friend's honor.

Joining Williams this year was another legendary leader – former UNC and University of Texas football coach 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 his wife's diagnosis at 29 and is grateful to those who believe in a world without cancer.

Event helps grateful patient give back

Curated 4 Ovarian Cancer was held Sept. 23 at Shady Wagon Farm to benefit ovarian cancer research and UNC Lineberger. The event featured a five-course dinner with wine pairing and a silent auction.

Along with her daughter, Terri Yates, Cindy Carroll said she was inspired to hold a fundraising event because she was grateful to her doctor, Linda Van Le, MD, and everyone at the N.C. Cancer Hospital. "It was the care that I got from everybody at UNC and realizing the dedication they have for patient care. I felt like I wanted to do something to give back," she said.

Carroll said she was thrilled when she found out Van Le also did cancer research, because the proceeds from her event could benefit researchers working to cure gynecological cancers. "I realized I could do something for her, since she'd done so much for me," Carroll said.

Van Le, a clinician and researcher, spoke at the event and said personal patient commitments like Curated are a great way to support cancer care, continuing research and clinical trials.

Carroll aspires to make Curated an annual event and to see even more people next year, but says her greatest hope is to see a cure for ovarian cancer. "I want women who are unfortunate enough to have ovarian cancer to have the hope for a cure. Earlier detection and then a cure."



From left: Linda Van Le, MD, Cindy Carroll and Terri Yates at the first-ever Curated 4 Ovarian Cancer event held Sept. 23 at Shady Wagon Farm in New Hill, North Carolina.