

cancerlines



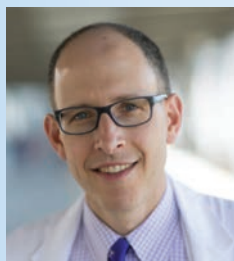
the inside lineup



3 Private philanthropy makes a difference for N.C. patients



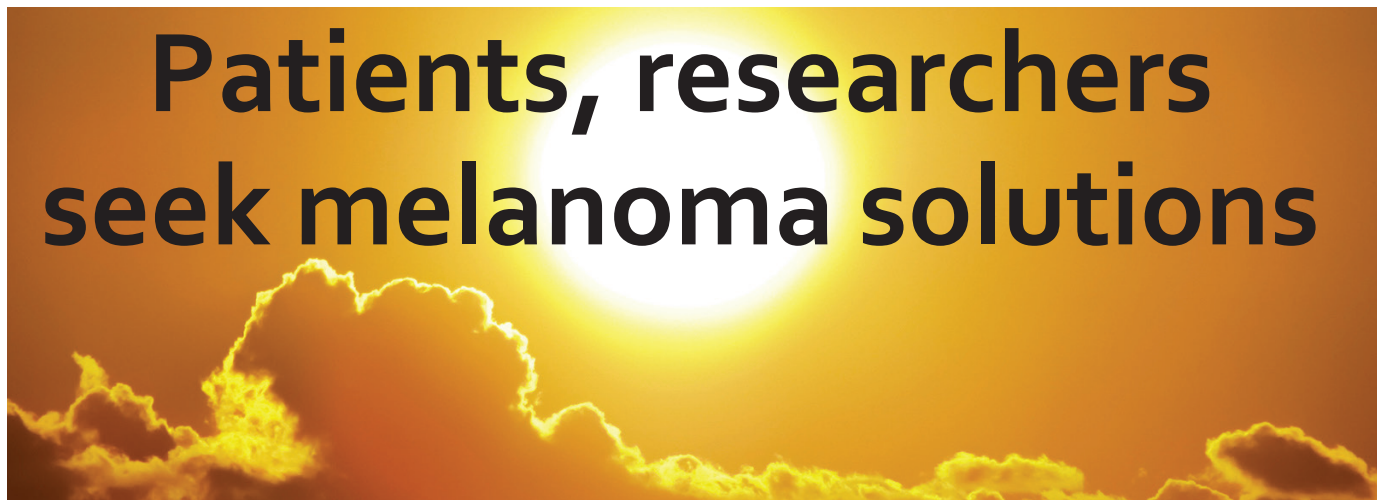
4 Donors' major gift supports breast cancer research



6 Matthew Milowsky, MD, awarded named professorship



7 Patient says thank you with volunteer hours in the lab



Patients, researchers seek melanoma solutions

Cancer treatment advances lead to increased survivorship

Ten years after he first discovered cancerous brown marks growing on his shoulder, Michael Martin learned the skin cancer was back. He already had the melanoma removed surgically twice, but the cancer came back a third time, and it had spread.

Now the cancer was on his lung — the cancerous cells were surgically removed — and in his brain, a complication that can be deadly or lead to disabling side effects.

Martin received a combination of immunotherapies as part of a clinical trial at UNC Lineberger. This form of treatment directs the body's natural defense system to fight the melanoma.

He also received radiation treatment directed at the tumors and to his brain to clear the melanoma that persisted. The treatment was difficult and there were complications, but Martin reports he has been recurrence-free since August of 2016.

"Without the skill and expertise that he brought, I would not be here today," Martin said, thanking his oncologist, UNC Lineberger's Stergios Moschos, MD, associate professor in the

UNC School of Medicine Division of Hematology/Oncology, along with the other physicians and staff.

Advances in treatment have made it possible to manage metastatic melanoma as a chronic disease, said UNC Lineberger's David Ollila, MD, the James H. and Jesse E. Millis Distinguished Professor in the UNC School of Medicine Division of Surgical Oncology and co-director of the melanoma program.

There are a number of checkpoint inhibitors, immunotherapy drugs that pump the "brakes" on the immune system that have been approved by the U.S. Food and Drug Administration. Follow-up data from clinical trials found that with a combination of ipilimumab and nivolumab, 58 percent of patients with advanced melanoma were alive three years after treatment.

In addition to immunotherapies, there have been a number of targeted treatments approved since 2011 that have increased doctors' arsenal of weapons they can use against the disease.

See [MELANOMA](#), page 2



WEAR PROTECTIVE CLOTHING



REAPPLY SUNSCREEN EVERY 2 HOURS

BE SAFE IN THE SUN

The key to a sun-safe summer is to cover up when the sun's rays are the most intense — between 10 a.m. and 4 p.m.

Sun protective clothing with UPF 25 or higher, long-sleeved shirts, sunglasses and hats can also protect your skin, and staying in the shade is recommended.

Be aware of surfaces like concrete, water and sand that can reflect the sun's rays.

Use a broad spectrum sunscreen with an SPF of 30 or higher, and reapply every two hours or after swimming or sweating. Check expiration dates, and remember that sunscreen exposed to high temperatures has a shorter shelf life.



WEAR UV-BLOCKING SUNGLASSES



BE AWARE OF REFLECTED RAYS



WEAR BROAD HAT



AVOID DIRECT SUNLIGHT



THE SUN IS STRONGEST FROM 10 A.M. TO 4 P.M.



Moonshot grant launches N.C. colorectal screening efforts

UNC Lineberger researchers are working to increase colorectal cancer screening and follow-up care across underserved areas in North Carolina, thanks to a \$55 million grant from the NCI Cancer Moonshot Initiative.

Researchers are working to increase screening in two key regions of the state through a multi-pronged effort in which researchers will mail cancer screening tests called FIT kits to patients, as well as bolster access to colonoscopy examination

networks. They are launching the project in two community health center networks, including one in northeastern North Carolina identified as a "hotspot" of colorectal cancer death for the nation.

The researchers' larger goal is to create a long-term, statewide strategy to reduce the burden of colorectal cancer and to address disparities through improved screening.

"We know colon cancer screening is effective, but we also know we're not

doing it at rates we need to in order to be fully effective," said UNC Lineberger's Daniel S. Reuland, MD, MPH, director of UNC Lineberger's Carolina Cancer Screening



Daniel Reuland, MD

See [SCREENING](#), page 3



Shelton Earp, MD

director's message

Making strides in the fight against cancer happens every day here at UNC Lineberger. Our physicians and researchers push to provide patient and family-centered cancer care, while at the same time exploring new and innovative treatments. To amplify the support provided by these key players, we are grateful and, in fact, rely upon many generous donors who recognize the purpose of our work and want to extend its impact. They see the endgame,

a vision that keeps us focused on the future and the advances that bring us closer to a world without cancer.

The cancer center is leveraging the Campaign for Carolina, the university's \$4.25 billion fundraising initiative, to make its case for increased support, and UNC Lineberger donors have answered the call. It is gratifying to know the hard work our faculty and staff put in at the cancer center is financially supported by those who've been touched by cancer — everyone from grateful patients to caregivers to family members and friends — and that their belief in what we do continues year after year.

With so many promising avenues to enhance cancer prevention, early detection and treatment, now is the perfect time to get involved in the cancer fight.

In this edition of Cancer Lines, you'll read about a named professorship recently awarded to Matthew Milowsky, MD, one of our best and brightest clinician/researchers in genitourinary cancer. You'll hear about donors like Bill and Nancy Graham whose donation will go to help breast cancer patients. We'll tell you about David Hesmer, a glioblastoma patient whose gratitude was so profound, he is currently volunteering in one of our most forward-thinking labs. You'll discover more about private philanthropy efforts like Corona Cares and how this program benefits cancer patient support in profound ways. You'll also learn about some exciting scientific discoveries that are happening right now in our labs and clinical trials — discoveries that couldn't happen without research funding.

In 2015, we set a goal to raise \$200 million over the course of the current fundraising campaign. At the time, it was a stretch to imagine we could achieve that mark. Now, just after the campaign's halfway point, you have already committed more than \$144 million! With your continuing help, we will soar past our dollar goal and home in on our real goal — to break the burden of cancer. Each and every donation made pushes research from concept to lab and then to reality for cancer patients and their families. Your support pays dividends in human capital — the brightest and the best, from the new recruit with novel ideas and computational skills to the internationally renowned professor who is changing the practice of medicine. 🦋

MELANOMA *continued from page 1*

Ollila said that with these treatments, and others, he has seen major gains in survival for patients with metastatic melanoma since he was in training. The five-year relative survival rate for patients with melanoma that has spread to distant sites is 248 percent in the United States, according to data from the National Cancer Institute.

"There's no doubt we have started to create a new generation of survivors over the past eight years," Ollila said.

The work is not finished, said UNC Lineberger's Nancy Thomas, MD, PhD, the Irene & Robert Alan Briggaman Distinguished Professor and chair of the UNC School of Medicine Department of Dermatology.

"We've seen a lot of change and improvement in treatment in the past few years, and it's continuing to evolve," Thomas said.

Since not all patients will respond to immunotherapies, Thomas said the "million dollar question" is how to turn a "cold" tumor, which has a poor response from immune cells, into a "hot" tumor that will respond.

If researchers can identify features of a patient's tumor that could help predict long-term survival or response to a therapy, that could help them improve treatment.

Thomas led a recent study, published in *The Journal of Investigative Dermatology*, that confirmed certain

inherited genetic features are linked to a person's risk for melanoma.

"If we can find groups of patients who will do extremely well, they might be able to avoid the toxicity of an adjuvant treatment," she said.

Finding better ways to treat melanoma once it has spread to the brain has also been an active area of research.

Moschos was involved in a national, multi-institution clinical trial that evaluated the impact of using immunotherapies for patients whose melanoma had spread to the brain. The results, published in the *New England Journal of Medicine* last year, showed the treatments generated a "meaningful response." More than a quarter of patients showing a complete response, which is the disappearance of all signs of cancer.

Another area of research, said UNC Lineberger's Frances Collichio, MD, professor in the UNC School of Medicine Division of Hematology/Oncology, is into potential treatment combinations that could deliver the effect of immunotherapies, but with fewer toxicities.

Collichio echoed the need for biomarkers — signals that can help physicians predict which patients will respond to which treatment.

"We want to figure out who these people are and get them the right treatment," she said.



Michael and Trina Martin.

In addition to thanking his doctors, Martin thanked his family — his wife of 24 years, Trina, and his two daughters, Tara and Taylor. He also received support from unexpected places. On a return flight from getting a second opinion about his care, a stranger asked if he could pray for him.

"He took my hand, and the guy next to me put his hand on his shoulder," he said. "The person behind put their hands on the shoulders of the people in front of them. Nobody complained or said anything."

Martin said the experience stuck with him, although he never found out the person's name or where he was from.

"To this day, I hope that I'm that kind of person and can help people out." 🦋



You will fuel cancer research for years to come by including a charitable gift to UNC Lineberger in your estate plans. Retirement assets, securities, business assets, bequests, and real estate are just a few ways that you can leave a legacy that impacts the future of cancer research.

We can guide you through your options by:

- helping you achieve your financial and philanthropic goals;
- making the most of your investments, real estate, or other holdings;
- ensuring your long-term impact in the fight against cancer.

Visit unccmedicine.org/survey to share your hopes for the future of cancer medicine or contact Martin Baucom, Senior Executive Director of Development and Communications at 919-966-9874 or martin_baucom@med.unc.edu

Brand's outreach, generosity help 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 nearly \$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 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, and 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's CEO Rodney Long lost his wife, Mary Anne, to cancer, and he was inspired to give back to the community.

"[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."

Support for cancer research and care is a giving priority for Constellation Brands, a company whose model of corporate citizenship seems nurtured by the Tar Heel principles of lux, libertas — light and liberty — to lead change, improve society and solve the world's greatest challenges. Constellation was originally founded by Marvin Sands, who graduated



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.

from UNC with a bachelor's degree in Commerce in 1947 after serving in the Navy during World War II. His son, Richard, joined the company in 1979 after receiving a master's degree and doctorate in social psychology from UNC. He would go on to become CEO and Chairman of the Board, overseeing a period of unprecedented corporate growth.

With the funds raised through Corona Cares each August, Rosenstein and his team 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.

"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."

In addition to supporting CCSP at the N.C. Cancer Hospital, Rosenstein said Corona Cares also goes to fund outreach efforts throughout the state of North Carolina, including bringing cancer survivorship programs to rural areas and translating survivorship materials into Spanish for non-English speakers.

"The fact that we can serve anyone from North

Carolina, regardless of need, is something I'm really proud of. The Corona Cares program helps us do that," Rosenstein said.

Joe De La Paz, senior vice president for the Southeast Business Unit at Constellation Brands, and Marren said they are also proud of this effort. Marren said retailers in every corner of the state get behind the Corona Cares effort every year, and they are impressed with the support and effort the wholesalers and retailers devote to bringing in these funds.

"Everyone takes pride in participating, and it's the one thing that everyone participates in; everyone's in," De La Paz said. "The wholesalers are in, and we've gotten more and more retailers committed. You can't be as successful alone; you have to have everyone on board."

Marren agreed. "We can't raise the funding we do without the retailers on board to support the programming through the sale of limes," he said.

Marren and De La Paz are looking forward to another successful August, setting a goal to bring in more money than in past years with totals of \$250,000-\$300,000 in their sights.

"We can't cure cancer, but we should make people feel better on a given day," De La Paz said. "We've all been impacted by cancer. We have the opportunity to do what we do for a living and give back." 8

SCREENING *continued from page 1*

Initiative. "We're losing opportunities to prevent deaths from colon cancer because our screening rate isn't as high as it should be, and there are a lot of barriers."

Colorectal cancer was the third leading cause of cancer-related death in the United States in 2019. Screening has proven effective in reducing colorectal cancer deaths, but too few people are getting screened, and there are notable gaps in screening by race, geographic region and socioeconomic status, researchers have reported.

Earlier this year, UNC Lineberger researchers identified 10 counties in northeastern North Carolina that are part of a cluster with higher rates of colorectal cancer mortality. They found that socio-economic deprivation and other factors were linked to higher mortality rates there.

There are multiple ways researchers can boost screening, including by mailing FIT kits directly to patients, by promoting screening for patients during clinic visits, and working to improve access to

screenings like colonoscopy.

During the first year of the screening project, the team is working to develop the infrastructure for the project, pilot-testing the intervention, and engaging partners and stakeholders from academia, industry, government, community and foundations in North Carolina.

"We'll be testing interventions iteratively and in pragmatic randomized trials, all the while looking at cost-effectiveness to see which approaches are sustainable and scalable," Reuland said. 8

Major gift supports efforts in breast cancer research

Bill and Nancy Graham of Winston-Salem, North Carolina, have donated \$1 million to support breast cancer research and care at UNC Lineberger. The Grahams established the Bill and Nancy Graham Breast Cancer Research Fund to provide the cancer center's leadership with unrestricted funding, which enables them to make investments where the need is greatest, including faculty recruitment and research support. It is also an important contribution to For All Kind: the Campaign for Carolina, UNC Chapel Hill's ambitious fundraising campaign.

"Bill and Nancy Graham are true North Carolinians who value the importance of service to others," said Shelton Earp, MD, director of UNC Lineberger and the Lineberger Professor of Cancer Research. "We're extremely grateful for their gift and the flexibility they have given us to use those funds where we believe it can have the most impact, both today and in the future."

Lisa Carey, MD, the Richardson and Marilyn Jacobs Preyer Distinguished Professor in Breast Cancer Research at UNC Lineberger and physician-in-chief of the N.C. Cancer Hospital, said the Grahams' vision will help speed the translation of laboratory discoveries into better and more effective breast cancer care.

"The Graham gift is a terrific opportunity for UNC Lineberger to attract the next generation of physician-researchers who specialize in breast cancer," Carey said. "Nancy and Bill have seen how much we can achieve when we have people who are not just excellent clinicians but who also bring a scientific focus to help create the fundamental knowledge to advance our understanding and treatment of breast cancer."

The Grahams' ties to UNC Lineberger go back to Bill's uncle, Page Graham, who was on the cancer center's Board of Visitors. The connection became more personal when Nancy was diagnosed with breast cancer in 2007. She started her treatment in Winston-Salem and then came to UNC Lineberger for a second opinion on her daughter's recommendation.

Nancy Graham said she felt she "hit the jackpot" with her care team at UNC Lineberger. "When I walked in the door at UNC, I knew I was in the right place. Dr. Lisa Carey was my oncologist and provided superlative care. The late Dr. Keith Amos



Nancy and Bill Graham with Nancy's doctor, UNC Lineberger's Lisa Carey, MD.

was my surgeon, and I adored him."

The Grahams view their latest gift to UNC Lineberger as a way to ensure that everyone in North Carolina has access to the most advanced and best cancer care, regardless of where they live.

"UNC Lineberger is one of the country's leading cancer care and research centers, and we want to help ensure it has the resources to remain great," Bill Graham said. "Nancy and I take great pride knowing that the cancer center serves all of the people of North Carolina. We thought this was an important gift to make because UNC Lineberger is doing great work across the state, especially in our rural areas."

The Grahams have been steadfast supporters of the cancer center, including the Mary Anne Long Patient Family Resource Center. In recognition of their donations, the resource center's main reception area is named in the Grahams' honor.

Nancy also is a former member of the Patient Family Advisory Council, which brings together patients and caregivers to play a leading role in enhancing patient- and family-centered care.

"We have seen firsthand how great the need is for improving the treatment of cancer," said Bill Graham. "Our investment in support of UNC Lineberger's research programs is an opportunity to be part of a larger effort that we're certain will lead to better cancer care for everyone in North Carolina. That is very important to us." 🦋

Top-notch care, research potential inspire donor's estate gift

Since her cancer diagnosis, Barbara Dean, a University of North Carolina-Chapel Hill alumna, has made an effort to educate herself about her disease and has truly become a part of the cancer community. Not content to be just a patient, she is an active participant in her cancer journey, and makes a point to help others along that journey, as well.

Like many breast cancer patients, her cancer journey began with a lump. Still, the triple negative breast cancer diagnosis in 2016 was a surprise, since a recent mammogram didn't detect any issues, and she had assumed the lump was related to a chest injury she'd suffered previously.

"When it didn't resolve, I knew I had to see my [general practitioner]," she said. "One mammogram and biopsy later, I got the news — triple negative breast cancer, a more rare and deadly form of the disease."

Luckily, UNC Lineberger researchers and physicians have made many advancements for this type of cancer and the breast cancer team, including Dean's oncologist Hyman Muss, MD, is well-versed in treating triple negative breast cancer.

"... while I was optimistic then, and remain optimistic now, I also knew there was a very real chance I would succumb to this disease," she said. "I decided to accept my diagnosis with as much grace and gratitude as I could muster and to look



Barbara Dean.

for ways to support cancer research."

As a child, Dean lost her father to cancer. With her own diagnosis and background as a CPA and CFP®, she knew it was time for her to take action and decided to make a major planned gift in memory of her mother and father.

"I have always known that I wanted to leave a portion of my estate to cancer research," she said. "I

had considered a few institutions, but after my experience here at UNC, that question was answered; the bequest would go to UNC Lineberger, one of the world's leading cancer research centers."

In addition to her estate gift, she offers her support where she can. She is a member of the UNC Lineberger Board of Visitors and the Patient and Family Advisory Council. Dean also serves on various project teams at the N.C. Cancer Hospital. She started and runs a book donation project for the Pediatric Hematology-Oncology Clinic, which brings books to pediatric cancer patients. Dean is also a supporter and participant of Get Real and Heel, an exercise program for cancer patients that she said has made a real difference for her.

"When I completed chemo, I had to work hard to regain my strength. The Get Real and Heel Program ... helped enormously," she said. "I entered their cancer exercise research study and have been diligent about working out with their exercise physiologists ever since."

Reflecting on her time as a patient, she has come to "appreciate my good fortune" for her treatment at the N.C. Cancer Hospital, the clinical arm of UNC Lineberger. But she is also grateful to the cancer researchers working in the labs to bring new treatments and therapies to patients like her.

"Thank you all for all that you do," she said. 🦋

Estrogen metabolites predict survivorship

UNC Lineberger researchers found preliminary evidence that measuring estrogen byproducts can help predict survival for women with breast cancer.

Researchers, including **Tengteng Wang**, a doctoral candidate in the UNC Gillings School of Global Public Health, measured levels of estrogen byproducts in urine from a group of women with breast cancer. Relative levels of “good” versus “bad” estrogen byproducts were linked to survival, they reported.

Free estrogen in the body is broken down into several byproducts, 2-hydroxyestrone, or 2-OHE, is a “good” type of byproduct. Another metabolite, 16-alpha-hydroxyestrone, is known as a “bad” metabolite because of its pro-cancer effects that lead to abnormal growth and DNA damage.

“Researchers are most interested in examining the ratio of the two metabolites 2-OHE and 16-alpha-OHE, which reflects the relative balance of the ‘good’ metabolite versus the ‘bad,’” said UNC Lineberger’s **Marilie Gammon, PhD**, professor in the UNC Gillings School of Global Public Health. “This ratio may therefore represent an individual’s inherent estrogen metabolism profile. Our study reported here is the first to focus on the association between urinary estrogen metabolites and survival after breast cancer.”



Weng



Gammon

Genetic traits help tailor colorectal therapies

An analysis led by a UNC Lineberger researcher found next-generation sequencing of tumor DNA from patients with colorectal cancer revealed genetic alterations that were linked to different survival and treatment outcomes.

The findings, published in the *Journal of Clinical Oncology*, could help define strategies to more effectively treat colorectal cancer, the second leading cause of cancer death in the United States.

“This is an example of precision oncology, where using genetics, we are able to stratify tumor types that we once believed were homogeneous, and to identify new patient subgroups that might benefit from tailored therapies,” said UNC Lineberger’s **Federico Innocenti, MD, PhD**, associate professor in the UNC Eshelman School of Pharmacy Division of Pharmacotherapy and Experimental Therapeutics.



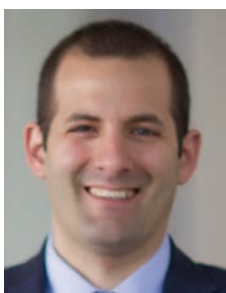
Innocenti

Aggressive cancer connected to enzyme

Patients are in dire need of improved therapies that attack the underlying cellular features of basal-like breast cancer, the most aggressive and difficult-to-treat subtype of breast cancer.

In lab experiments, UNC Lineberger researchers found an enzyme called USP21 promoted proliferation of basal-like breast cancer and is upregulated in a significant percentage of patient tumors.

“We think USP21 could not only drive basal-like breast cancer in patients, but could represent a new, future target for therapeutic intervention,” said UNC Lineberger’s **Michael Emanuele, PhD**, associate professor of pharmacology and the paper’s senior author. “We also think targeting USP21 could



Emanuele

sensitize cancer cells to therapies already in clinical use to treat patients with this disease.”

Autophagy can aid in cancer treatment

Researchers from UNC Lineberger and other collaborating institutions report promising results from early laboratory studies of a treatment strategy that forces pancreatic cancer to rely on autophagy, also known as “self-eating,” in which cells recycle their own parts for energy. Their preclinical studies demonstrated the benefit of combining a treatment that forces the cells to rely more heavily on autophagy with another compound that can indirectly block that same energy pathway once they are reliant on it for fuel.

“... if you cripple perhaps the most significant pathway for energy – glycolysis – the cancer cell really starts to suffer, and it ratchets up autophagy. We found a way to make pancreatic cancers more dependent on autophagy, and in consequence, more sensitive to an autophagy inhibitor,” said UNC Lineberger’s **Channing Der, PhD**, the Sarah Graham Kenan Professor of Pharmacology at the UNC School of Medicine.

UNC Lineberger’s **Kirsten Bryant, PhD**, a research assistant professor and the study’s first author, said additional questions remain. Clinical studies are needed to determine if the treatment is tolerated and effective for patients. She stressed cautious optimism about the findings, but added she was heartened that a second research group made a similar finding — especially when reproducibility of scientific findings can be difficult.



Der




Bryant

Care shortages ahead for cancer survivors

An aging population, a growing number of cancer survivors, and a projected shortage of cancer care providers will result in a challenge in delivering the care for cancer survivors in the United States if systemic changes are not made, according to a commentary in the *Journal of the National Cancer Institute*.

“We are now faced with the challenge of how to create ‘right-sized’ follow-up care in oncology. How do we transition survivors in a rational way that ensures they receive the proper follow-up care in the most appropriate setting by the most appropriate providers?” said **Deborah K. Mayer, PhD, RN, AOCN, FAAN**, director of cancer survivorship at UNC Lineberger and the interim director of the National Cancer Institute’s Office of Cancer Survivorship, who coauthored the commentary with Catherine M. Alfano, PhD, vice president of survivorship at the American Cancer Society.

Studies have shown that people are waiting longer to receive cancer care in the United States, and research suggests it will continue to be an issue in the years ahead if changes are not made. An American Society of Clinical Oncology report in 2014 estimated there would be a shortage of 2,200 oncologists, or approximately a 10 percent gap in providers, by 2025.

To address this supply and demand gap, Mayer and Alfano recommend the development of risk-stratified cancer follow-up care, an approach others put forward a decade ago, and one that has been demonstrated to be effective in Australia, Canada and the United Kingdom. 



Mayer

Honors and Awards

Honors

Ronald Chen, MD, MPH, was elected as a member of the American Society for Clinical Investigation, a medical honor society.

Pengda Liu, PhD, was awarded a V Scholar Grant in 2018 by the V Foundation for Cancer Research.

Charles M. Perou, PhD, was named a 2019 Giant of Cancer Care by OncLive, honoring his scientific achievements that have advanced the field of cancer diagnostics.

Bryan L. Roth, MD, PhD, was elected to the American Academy of Arts and Sciences.

Andrew Wang, MD, was inducted into the American Institute for Medical and Biological Engineering’s College of Fellows.

Awards

Yuliya Pylayeva-Gupta, PhD, was awarded a \$2.2 million National Cancer Institute grant to support her research into the immune response in pancreatic cancer.

Andrew Z. Wang, MD, and Melina R. Kibbe, MD, the Colin G. Thomas Jr. Distinguished Professor and chair of the UNC School of Medicine Department of Surgery, were awarded a \$1.5 million, four-year grant from the National Institute of General Medical Sciences to study the use of nanoparticles to prevent a complication of surgery.

Qing Zhang, PhD, will receive the 2020 ASIP Cotran Early Career Investigator Award from the American Society for Investigative Pathology.

Community advocate's legacy fuels doctor's research

For Matthew Milowsky, MD, the why of genitourinary cancers is just as important to him as the how and what. As a former philosophy major, it's natural that the questions behind these cancers are what drive the clinician and researcher to explore new methods to treat and care for his patients.

UNC Lineberger's Milowsky is the newly named George Gabriel and Frances Gable Villere Distinguished Professor of Bladder and Genitourinary Cancer Research, the section chief of genitourinary oncology and co-director of the Urologic Oncology Program.

But before he achieved these accolades, Milowsky was just another kid in college, undecided about his major and his future and worried about what his dad would think.

"I always had an interest in medicine, and I ended up pursuing my undergraduate at the University of Pennsylvania. I took pre-med courses, and I honestly didn't like it at all," he admitted. "I decided to major in philosophy. I called my father to tell him I had decided to pursue philosophy and not to go medical school, and there was a very long pause on the phone."

With a bachelor's degree in philosophy under his belt, Milowsky took his MCATs after graduating college and spent a gap year as a research assistant at Weill Cornell Medical Center as part of CALGB, a cancer research cooperative group. Though Milowsky pursued his doctorate at SUNY Downstate College of Medicine in New York, he didn't know he wanted to be an oncologist. It was during his residency in Boston, wavering between oncology and nephrology, that he made his decision.

"I was drawn to oncology because of the tremendous research opportunities and so much more that needed to be done." But the loss of his mother to cancer also played a role in guiding his decision. "Though we don't always know what leads us in the directions that we take, I think [her death] certainly played a role. All [these things] together is what drew me to oncology."

Milowsky spent the following years as a fellow and junior faculty member at New York-Presbyterian-Weill Cornell Medical Center and another five years as an assistant attending physician at Memorial Sloan-Kettering, learning from mentors in the fields of medical oncology and urology. Taking the next step in his career at UNC Lineberger was an easy decision for Milowsky. He assumed the section chief role for genitourinary oncology because it was a good direction for his career, but the caliber of the team truly sealed the deal.

"I knew UNC Lineberger was a collegial, collaborative environment to work in, and that was incredibly appealing. As well as the exceptional people ... an absolutely outstanding group of colleagues in medical oncology, urology and radiation oncology," he said.

Milowsky's clinical and research work at UNC Lineberger has spanned eight years, and his star is still rising. Recently, Milowsky was named a distinguished professor, an endowed position that honors accomplished faculty and comes with sustained funding to further research programs, and recruit and retain



Above: Matthew Milowsky, MD.
At left: Left to right: Chris Villere, Wally Loewenbaum, Lil Loewenbaum, Milowsky, Lamar Villere, Bess Loewenbaum, Michelle Villere and Shelley Earp, MD, director of UNC Lineberger.

high-performing faculty.

The professorship was endowed and named in memory of New Orleans businessman, family man and community advocate George Villere, who died of bladder cancer. The professorship both supports Milowsky's research and recognizes Villere, a gesture that truly touched Villere's family.

"Something like this really makes you think long and hard about the meaning of the word 'legacy,'" said Lamar Villere, George's son. "To have Dad's name and memory linked to the incredible work that [Milowsky] and others at UNC Lineberger are doing gives us all the real sense that his spirit is alive and, consistent with Dad's personality, focused on helping others. When Matt, UNC Lineberger Director Shelley Earp and the rest of the team explained some of the research and clinical trials they were working on, I could literally hear Dad telling all of his friends about it; he would have been so proud and honored to be connected to it."

"I think we've all lost individuals that are close to us, and to be able to have a professorship named after someone that was clearly so incredibly meaningful to their family and the community at-large is very special. It's a privilege and a tremendous honor," Milowsky said.

With the support from the professorship, Milowsky said his goal is to further the recent research progress made in urological cancers, including bladder cancer, which historically has seen fewer breakthroughs than

other cancers during the past 30 years.

"Clinical and translational research related to patient care is critically important to me, and with bladder cancer, there's really been very little progress until recently in almost three decades," he said. "The drive to want to develop new therapies for patients with this devastating disease is what brings me to work every day."

Milowsky's vision for making these clinical advances encompasses translational research that begins with hard work in the labs, success in clinical trials and ultimately, new therapies for patients with genitourinary cancers. He has also led an effort sponsored by the Bladder Cancer Advocacy Network (BCAN) with eight participating academic institutions to deliver a next generation sequencing report to patients to explore potential therapies and also to create a rich biorepository for future collaborative research efforts. Milowsky said he's excited about the potential research outcomes as the team analyzes the clinical data, the RNA- and DNA-sequencing information, and the biorepository specimens.

"It's a tremendous opportunity to learn more about the underlying biology of bladder cancer," Milowsky said. "I love the idea of fostering collaboration with individuals throughout the country and the world."

And while his patients and research are so very important, Milowsky said, "it is my wife, Amy, and our three children, Madeline, Maxwell and Mia, who make every day better than next." 8

Grateful patient, lab team work to find cancer therapies

Once cancer treatment ends, hopefully with a clean bill of health, most patients hightail it away from the hospital, putting the endless batteries of tests, needle sticks and scans in their rearview mirror. So it's a rare patient that returns of their own volition, and rarer still, becomes a lab volunteer.

But that's exactly what David Hesmer did. Hesmer, 28, is a volunteer in the Shawn Hingtgen, PhD, lab, working sometimes weekly or monthly with Hingtgen and Kevin Sheets, PhD, to further the study of glioblastoma, something Hesmer knows a lot about.

Hesmer was diagnosed with glioblastoma in 2016, but it wasn't a straightforward or easy diagnosis. Severe headaches, nausea and abnormal fatigue were passed off as gastritis or a bad hangover, and Hesmer found himself visiting doctors with increased frequency.

"By Labor Day 2017, I was having the worst headache of my life," Hesmer said. "I began to throw up, and it didn't stop for days. I couldn't eat, couldn't sleep, couldn't work. Finally, an MRI confirmed that there was a real problem. I had an aggressive brain tumor that needed to come out immediately."

After being rushed to the N.C. Cancer Hospital, the clinical arm of UNC Lineberger, that same day, Hesmer had surgery and scheduled chemotherapy and radiation treatments. And even though doctors advised against it, Hesmer, naturally, googled his condition.



Simon Khagi, MD

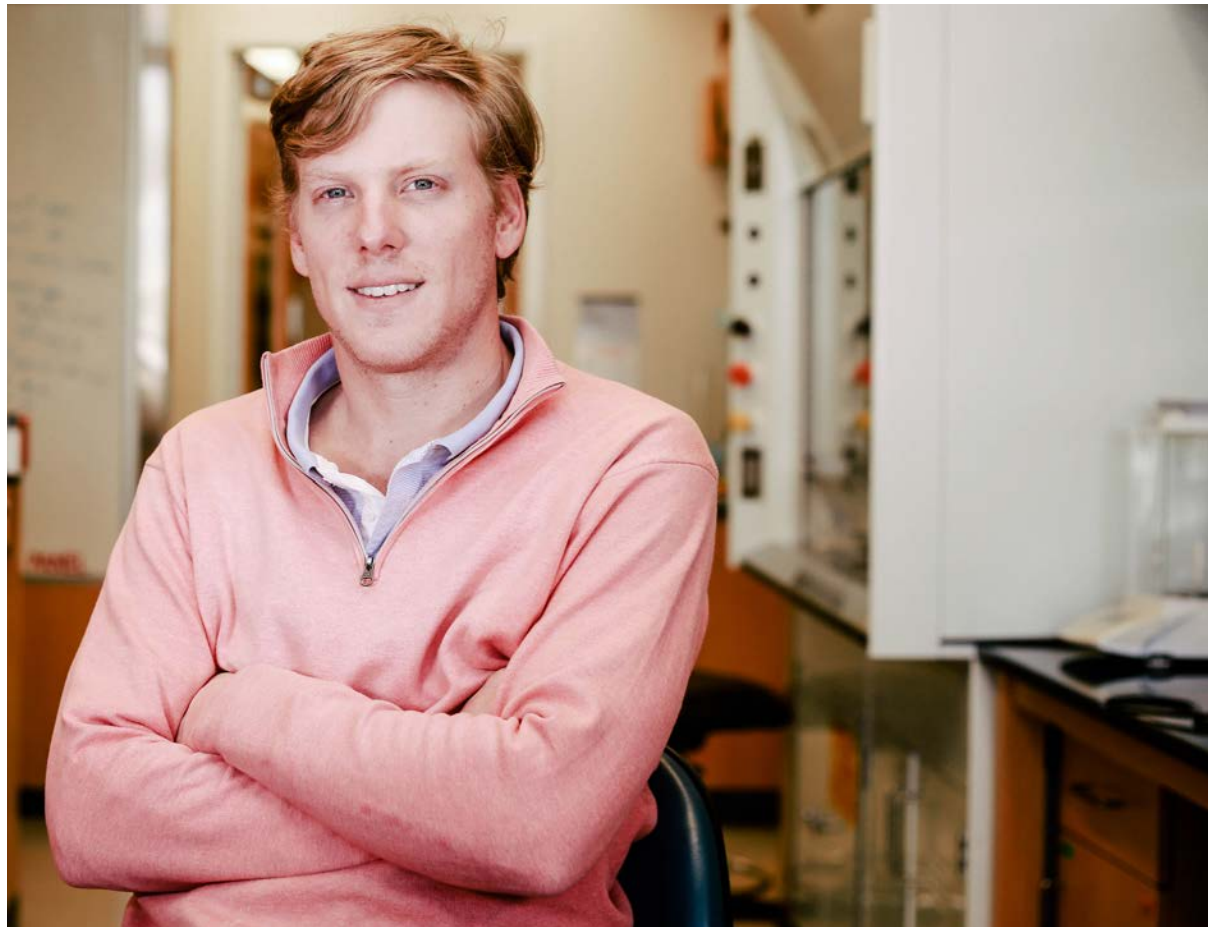
"I found out what I was dealing with," he said. "The results are dismal with glioblastoma. It was a pretty big moment for me, understanding what I actually had."

Helping Hesmer cope with the reality of his disease was UNC Lineberger's Simon Khagi, MD, a neuro-oncologist and chief of UNC Lineberger's brain tumor program.

"After his initial surgery, a majority of disease was removed. It can't ever be completely removed, and a rootlike system of cells are left over, so [patients] see a neuro-oncologist," Khagi said. "I see myself as quarterbacking for my patients; they not only meet me, but they meet the radiation oncology team to discuss that aspect of care."

Hesmer had an extreme reaction to chemotherapy but worked with Khagi on solutions to the extreme nausea, and while his health wasn't the greatest, he was able to find something to look forward to while he recovered — a chance to make a difference for other glioblastoma patients in the lab.

Hingtgen's lab has been exploring using the potential of stem cells to treat terminal cancers, including



Above: David Hesmer in the Hingtgen lab at UNC Lineberger. Below: Hesmer with Kevin Sheets, PhD, working with a slide.

glioblastoma, and Hesmer learned of the research while still in treatment. "In one random meeting, [Hingtgen] described what they were working on, and it led to me volunteering," Hesmer said. "They asked me to do it, and I would never have said no to that."

Sheets works closely with Hesmer in the lab and said having him volunteer reminds the lab team that their work goes beyond test tubes and pipettes.

"It's easy to get caught up in the daily grind of the lab; conduct an experiment, crunch the numbers, analyze the data and plan the next experiment," Sheets said. "Over time, the focus shifts away from the disease and toward the treatment itself. If you're not careful, you'll forget the whole reason you're doing the experiments in the first place — to help people suffering from the disease."

"We are no longer just trying to shrink his tumor in a mouse," Hingtgen said. "We are trying to find something that is effective enough and safe enough to potentially treat a friend and fellow lab member. Our science has to be good enough to look David in the eyes and say 'it works.'"

Hesmer said he figured he'd be more like a mascot to the lab team, but they have urged him to participate and have even tried to convince him to do his own study. Hesmer said seeing first-hand some of the research advances into cancers like his is inspiring, and



he has full confidence in the skills and insights of the Hingtgen lab team and is hopeful about the research outcomes.

"I'd like to see the stem cell delivery system make it to clinical trials, because I think it will be effective as a therapy," he said.

While a cure for glioblastoma is not yet a reality, therapies are what keep patients like Hesmer feeling well and optimistic for the future.

"In this position I feel like I've been given a purpose, and I wouldn't have had this opportunity before," Hesmer said. "To be a part of cancer therapies, even my own, is a very special thing." 8

"We are trying to find something that is effective enough and safe enough to potentially treat a friend and fellow lab member. Our science has to be good enough to look David in the eyes and say 'it works.'"

- Shawn Hingtgen, PhD

calendar of events

July
20th CarrieOn Golf Tournament, Raleigh



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



Participating in the check presentation were (left to right) UNC pitcher Hansen Butler; N.C. Cancer Hospital's Meghan Fox, LRT/CTRS, CCLS; Durham Academy baseball players Jack Goldstein, who is being treated for cancer at UNC, and his brother Ethan Goldstein; and Chase Jones, Vs. Cancer founder, cancer survivor and former UNC Tar Heel baseball player.

Durham Academy and Vs. Cancer raise funds for brain cancer research, care

Recently, 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.

As part of a local fundraising challenge, Durham Academy was able to "win" the fundraising campaign among eight regional high school lacrosse teams, and choose where the proceeds from the campaign will go. The cause is personal for the school, as eighth-grader Jack Goldstein is being treated for leukemia at UNC Lineberger, and his brother, Ethan, also a baseball player, helped drum up support for the cause and increase the fundraising totals.

Vs. Cancer is a nonprofit started by a brain cancer survivor that helps children with cancer.

Chapel Hill Derby Day event offers fundraising and fun for a good cause

A Derby Day fundraiser was held May 4 at the Chapel Hill Country Club in Chapel Hill by UNC Lineberger supporters Ian and Lucy Falk and Lee and Chris Harris.

In addition to enjoying the Kentucky Derby and other festivities, guests could win a bourbon tasting and other items.

The event raised more than \$18,000, and proceeds went to support UNC Lineberger's Comprehensive Cancer Support Program, a multidisciplinary program dedicated to helping patients, caregivers and families with cancer treatment, recovery and survivorship.



Left to right:
Ian and Lucy
Falk and Lee
and Chris Harris.