BreakThroughs

Fall 2024

Duke Cancer Institute

THE NEXT GENERATION

Investing in the Future


LES TODD

MICHAEL B. KASTAN

ON THE COVER:
Gabriella Torres is driven to learn more about cancer because her brother was diagnosed and successfully treated for leukemia when she was a child. Duke's PRIME-PREP program helped her get the research experience she needed to become a PhD student in the Department of Integrative Immunobiology at Duke University School of Medicine. Read her story on page 8.

AT DUKE CANCER INSTITUTE (DCI), we strive to be the employer of choice for professionals in cancer fields and to ensure that the next generation of physicians and scientists represents the communities we serve. A diverse cancer workforce improves patient outcomes and leads to creative solutions and novel approaches in cancer research and patient care.

In this issue of *Breakthroughs*, you will meet just a few of the people working to invigorate the cancer workforce, as well as a student pursuing her goal of earning a PhD in integrative immunobiology thanks to a federally funded DCI effort aimed at bringing more recent college graduates into the sciences.

Also in this issue, you'll learn one way in which DCI is continuing to innovate in treating the whole person, not just the cancer. An initial clinical trial of a new structured support program to help young adults successfully manage their new lives as cancer survivors helped researcher Caroline Dorfman, PhD, win a MERIT award from the National Institutes of Health to conduct a larger trial of this intervention. This long-term grant recognizes exceptional researchers whose work shows significant promise.

> "IN THIS ISSUE OF *BREAKTHROUGHS*, YOU WILL MEET JUST A FEW OF THE PEOPLE WORKING TO INVIGORATE THE CANCER WORKFORCE, AS WELL AS A STUDENT PURSUING HER GOAL OF EARNING A PHD IN INTEGRATIVE IMMUNOBIOLOGY THANKS TO A FEDERALLY FUNDED DCI EFFORT AIMED AT BRINGING MORE RECENT COLLEGE GRADUATES INTO THE SCIENCES."

None of these efforts, and many others, would be possible without our donors and friends. Thank you for all that you do in helping us shape the future of cancer care and research.

Michael Kastan

Michael B. Kastan, MD, PhD
Executive Director, Duke Cancer Institute
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Positive Results in Ovarian Cancer Clinical Trial

Angeles Alvarez Secord, MD, a gynecologic oncologist at Duke Health and Duke Cancer Institute, shared encouraging new data on ovarian cancer treatment at the European Society for Medical Oncology meeting in Barcelona, Spain in September 2024.

She was principal investigator of the PICCOLO trial, which tested mirvetuximab soravtansine (MIRV) for a particularly challenging form of cancer known as platinum-sensitive ovarian cancer. The study focused on patients with high levels of a protein called folate receptor alpha (FRα).

The results were promising: over half of the patients in the phase 2 trial saw their cancer shrink or disappear, with an overall response rate of 51.9%. The treatment's effects lasted an average of 8.25 months, and patients went about 7 months without their cancer worsening.

MIRV was approved by the U.S. Food and Drug Administration in 2023 for the treatment of platinum-resistant ovarian cancer. The drug is currently undergoing evaluation for approval in Europe, potentially expanding access to patients globally.

"Platinum-based chemotherapy can become less effective over time, and patients may experience severe side effects," said Secord, a professor of obstetrics and gynecology in the division of gynecologic oncology at Duke University School of Medicine. "MIRV offers a potentially more effective and less toxic treatment option."

Secord highlighted a major challenge faced by patients: those who take PARP inhibitors (PARPi), a type of maintenance treatment used after chemotherapy to keep cancer from coming back, tend to respond less to future treatments. This is especially true for therapies that use platinum-based drugs.

MIRV, however, has shown promise even in this difficult-to-treat population, providing a much-needed option for patients with few effective alternatives left.

The PICCOLO trial also tested how safe and effective MIRV is for patients and found that most patients handled the drug well. Common side effects included neurosensory issues, gastrointestinal problems, dry eye, and blurred vision, but trial data indicated that these were mostly mild and resolved over time.

MIRV is an antibody-drug conjugate (ADC) that combines an antibody that targets cancer cells with a potent anti-cancer drug. It is the first FDA-approved ADC for ovarian cancer and the only new therapy specifically for platinum-resistant ovarian cancer.


KEN HUTH

ANGELES ALVAREZ SECORD, MD

The unique composition of MIRV is considered key to its effectiveness. The drug is designed to target FRα, a protein commonly found on the surface of ovarian cancer cells. Once attached, a cleavable linker releases a potent cancer-killing agent, DM4, which interferes with the cancer cells' ability to divide and spread.

This targeted approach allows MIRV to zero in on cancer cells while sparing healthy ones, offering a strategic advantage over traditional chemotherapies that can affect both.

The global study screened 302 patients who had undergone at least two rounds of chemotherapy, and 79 eligible participants were enrolled in the clinical trial.

At the meeting Secord thanked the patients, their families, clinical investigators, and research teams from the United States and abroad who participated in the trial.

—Shantell Kirkendoll


KEN HUTH

RAISING AWARENESS
Congresswoman Valerie Foushee, left, talks with Executive Vice President for Health Affairs and Duke University School of Medicine Dean Mary Klotman, MD, at the Duke Cancer Center on Wednesday, August 14, 2024. Congresswoman Foushee (NC-04) presented the Duke Center for Brain and Spine Metastasis team with a copy of the resolution she introduced to Congress designating June as Brain and Spine Metastasis Awareness Month.

THE CHALLENGE OF BECOMING A PHYSICIAN SCIENTIST

BY ANGELA SPIVEY

Five years after joining the faculty at Duke University School of Medicine and Duke Cancer Institute, Tammara Watts, MD, PhD, associate professor of head and neck surgery & communication sciences, is finally outfitting her own lab.

In 2019, as a newly recruited surgeon and scientist, she was charged with finding an established researcher who would agree to lend her space to get her research program started. This model is not uncommon at Duke for junior physician-scientists. They are just beginning their clinical practices, and without large amounts of independent federal research funding, starting their own lab at the same time is a heavy lift.

Watts found a generous mentor and colleague in Gerard “Gerry” Blobe, MD, PhD, professor of medicine, cell biology, and pharmacology and cancer biology. “I didn’t know a single person on campus, but I called a lot of people. Gerry was gracious enough to take me in,” Watts said. “He gave me a quarter of his lab. That’s where my team works. He gave me use of his common equipment, so I didn’t have to spend any money on that. His team has helped me out in a pinch when my folks have not been able to come in for experiments, and vice versa.”

Watts would not be setting up her own lab without a $3.1 million grant that she received in April 2024. Awarded by the National Institutes of Health (NIH), it’s an R01 — an independent investigator grant that funds a specific, mature research project for up to five years.

LES TODD

“ I DIDN’T KNOW A SINGLE PERSON ON CAMPUS, BUT I CALLED A LOT OF PEOPLE. GERRY WAS GRACIOUS ENOUGH TO TAKE ME IN. HE GAVE ME A QUARTER OF HIS LAB. THAT’S WHERE MY TEAM WORKS. HE GAVE ME USE OF HIS COMMON EQUIPMENT, SO I DIDN’T HAVE TO SPEND ANY MONEY ON THAT. HIS TEAM HAS HELPED ME OUT IN A PINCH WHEN MY FOLKS HAVE NOT BEEN ABLE TO COME IN FOR EXPERIMENTS AND VICE VERSA.”

Tammara Watts

" THE NUMBER OF POSTDOCS ON CAMPUS HAS DECLINED PRETTY SIGNIFICANTLY," BLOBE SAID. THAT'S A PROBLEM BECAUSE ACADEMIC SCIENTISTS, AND PARTICULARLY PHYSICIAN-SCIENTISTS, WHO BOTH CARE FOR PATIENTS AND CONDUCT RESEARCH, DRIVE DISCOVERY OF NEW AND BETTER TREATMENTS.

Gerard "Gerry" Blobe

LES TODD

She attributes this success to many factors, including the lab home with Blobe, mentoring and collaboration from other Duke colleagues, and a Duke Cancer Institute (DCI) pilot grant that allowed her to collect preliminary data that she used to show proof of concept in the NIH grant application.

Watts's experiences demonstrate some of the challenges of building a career as a clinician-scientist. Paying for lab space is just one of the hurdles. Putting in the time required is another; It takes years beyond earning an MD-PhD to build a lab. Increasingly, new PhD graduates go into industry, said Blobe, who is also director of education and training at DCI. "The number of postdocs on campus has declined pretty significantly," he said. That's a problem because academic scientists, and particularly physician-scientists, who both care for patients and conduct research, drive discovery of new and better treatments.

To nurture the next generation of scientists and build a diverse, robust cancer workforce, the National Cancer Institute and DCI have put increased emphasis on education and training. DCI has launched 19 new training initiatives in the last five years, including efforts to engage high school students and undergraduates, all the way to junior faculty. (See "Filling in the Gaps," page 8.)

Many of the new training programs focus on groups that are typically under-represented in medicine. Duke is also increasingly focusing on reaching out to the Durham community to engage middle and high school students in science and get them interested in coming to Duke, in collaboration with DCI Associate Director of Community Outreach, Equity, and Engagement Tomi Akinyemiju, PhD, Blobe said.

Creating a clinical and academic workforce that reflects the population of the people it serves is a priority for Duke Cancer Institute, said Steven Patierno, PhD, deputy director of DCI, who has for more than 20 years directed programs to eliminate cancer health disparities and achieve health equity.

As Watts pointed out, several studies show that having a diverse physician workforce is linked to better patient outcomes, including a 2023 study from John Snyder, MD, of the US Department of Health and Human Services, which showed that increased Black representation in the primary care physician workforce was associated with a higher life expectancy for Black patients and inversely associated with all cause Black mortality.

DISPARATE SURVIVAL, DISPARATE WORKFORCE

In Watts' new NIH-funded project, she and colleagues will use next-generation genomic sequencing and other advanced technologies to explore whether there are biological reasons that Black people with head and neck cancers do poorly, even after controlling for HPV status and social determinants of health like income and access to care.

Her previous research has been in cancer biology, and she had never thought of studying health disparities. But her peers at Duke, including Nosayaba Osazuwa-Peters, PhD, a head and neck cancer epidemiologist, encouraged her to explore the questions that nagged at her as she treated patients.

"He really got me thinking," Watts said. "Everybody says, oh, you've got HPV-positive throat cancer, it's a better prognosis. But I know my Black patients don't do as well." Some studies have shown that Black patients with HPV-positive throat cancer are more than three times as likely to die of the disease compared to white patients, Watts said.

Watts got started on initial explorations with a small grant from NRG Oncology and a research pilot grant directly from DCI. The preliminary data she generated helped her win the NIH grant. "We asked some questions like if we took pathology slides and used spatial transcriptomics, could we do an analysis of gene differences between two racial groups to see if there were some driver genes that may be of importance?" Spatial transcriptomics uses high-resolution pathology images combined with RNA sequencing, so scientists can examine gene expression in the context of the exact position of the cells in tissue. Her initial study showed that the approach is feasible and can be scaled up.

The discoveries she and collaborators make will help all patients with HPV-positive throat cancer, Watts said.

"Even aside from racial disparities, we don't fully understand head and neck cancer," said Kyle Lafata, PhD, a co-investigator on Watts's new NIH grant and the Thaddeus V. Samulski Associate Professor of Radiation Oncology. "For example, things like immunotherapy have really taken off and work for cancers such as breast and lung cancer," he said. "But most of the trials have not worked well for head and neck cancer. So we really have to go back to the basic biology of those tumors."

In addition to funding the science, the grant supports new efforts to help diversify the oncology workforce, including a surgery resident from Howard University who will spend two years at Duke conducting oncology research in an area of their choosing. This part of the grant will also support a high school student from the City of Medicine Academy in Durham to spend a summer in Watts's lab or that of any of her co-investigators to earn school credit while learning what it's like to conduct research.

The grant will also fund an effort to make laboratory space available to junior faculty who want to get started conducting translational research. "I'd like to have a dedicated incubator lab with all of the equipment that someone would need to run experiments, so that their precious pilot funds and startup funds can be used purely for generating data," said Watts, who is associate director for equity, diversity, and inclusion at DCI.

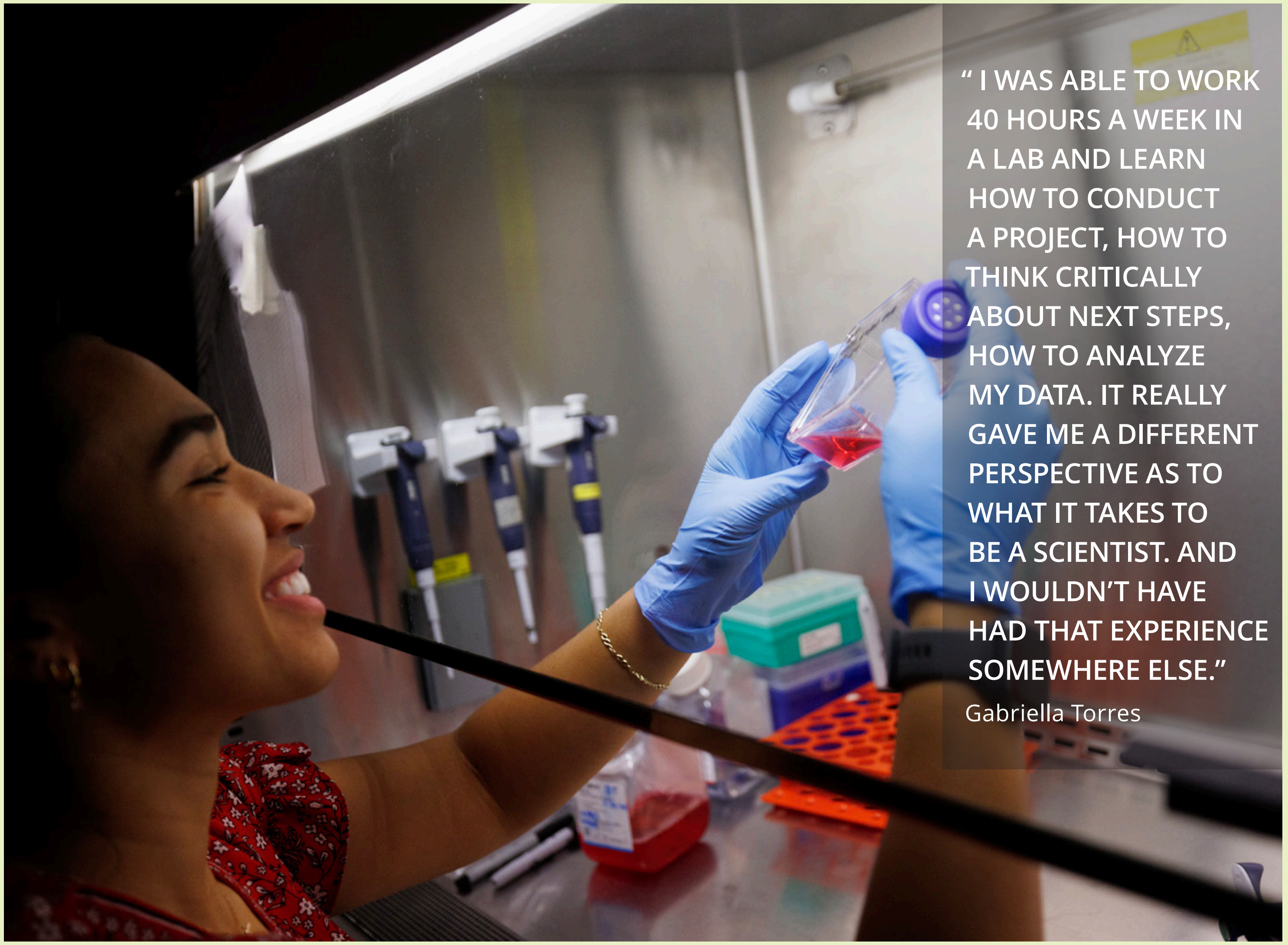
None of these plans would have been possible if Watts hadn't found a temporary home for her research with Blobe's lab. "I credit a lot of my ability to write these grants and get the data and brainstorm ideas for Gerry taking me in," Watts said.

"I have benefited from outstanding mentorship throughout my career in academic medicine," she said. "If we aim to improve workforce diversity, we must create welcoming environments for the development of early career faculty interested in pursuing research."

LES TODD

GERARD "GERRY" BLOBE and **TAMMARA WATTS** work to build the next generation of cancer scientists and physicians.

FILLING IN THE GAPS



> “I WAS ABLE TO WORK 40 HOURS A WEEK IN A LAB AND LEARN HOW TO CONDUCT A PROJECT, HOW TO THINK CRITICALLY ABOUT NEXT STEPS, HOW TO ANALYZE MY DATA. IT REALLY GAVE ME A DIFFERENT PERSPECTIVE AS TO WHAT IT TAKES TO BE A SCIENTIST. AND I WOULDN’T HAVE HAD THAT EXPERIENCE SOMEWHERE ELSE.”
>
> Gabriella Torres

EAMON QUEENEY

When Gabriella Torres was eight, she needed steroids to control asthma and allergies. Then her allergist recommended she take up swimming, and it helped. When she was nine, her younger brother was diagnosed with leukemia. He was treated and recovered. But watching him go through that left an impression.

As she got older, Torres had nothing but questions. Why did swimming improve her asthma? Why did her brother get so sick? And why did treatment work for him when it doesn’t for so many other children?

Torres was driven to find the answers. In college at New York University, she thought about becoming a pediatric oncologist; she pursued research experiences recommended for students interested in medicine. But then during her junior year an internship at a pharmaceutical company got her interested in pursuing a PhD. “I had never heard of getting a PhD before that,” said Torres, who is from New York City, where her parents are chefs. “But I was able to see that I could use my love of thinking critically about problems long term but still work on a project that relates directly to helping people.”

Torres was on the swim team in college and spent much of her free time training. But she got as much research experience as she could, then applied to the integrative immunobiology PhD program at Duke University School of Medicine in 2023.

Torres didn’t get in. Her goal of becoming a scientist could have ended there. Instead, she received a call from Johnna Frierson, PhD, associate dean of equity, diversity, and inclusion for the basic sciences at the School of Medicine, asking her if she’d be interested in applying for Duke’s PRIME PREP Program, which provides a year of research experience to recent undergraduates.

Torres interviewed for PRIME PREP and got in, then she spent time at Duke conducting research in the lab of Stacy Horner, PhD, associate professor in integrative immunobiology.

“I was able to work 40 hours a week in a lab and learn how to conduct a project, how to think critically about next steps, how to analyze my data,” Torres said. “And those were all experiences that I had done very surface level in the past. It really gave me a different perspective as to what it takes to be a scientist. And I wouldn’t have had that experience somewhere else.”

Torres also participated in professional development activities, including the annual Biomedical Research Conference for Minoritized Students, where she talked to other young scientists and to representatives of graduate schools from all over the country.

After PRIME PREP, Torres got admitted to seven graduate schools. She chose to enroll at Duke, and she’s now a first-year PhD student in the Department of Integrative Immunobiology. She didn’t want to leave the Duke community, she said. “The immunology program is on the smaller side, and that makes it feel more welcoming. I like being able to walk down Research Drive and wave to people and ask how their day is going.”

She’s a peer mentor for PRIME PREP this year, and she is excited that her younger brother is currently studying molecular genetics and microbiology at the University of Vermont. “He learned about a PhD through me, so now that’s his goal,” she said.

PRIME PREP is just one effort at Duke aimed at keeping talented people from all backgrounds on the path to becoming scientists and physicians.

Gerry Blobe, MD, PhD, director of education and training for Duke Cancer Institute, describes the goal of DCI’s efforts like this: “If someone wants to get involved in cancer, whether it’s research or clinical care, whatever level they are, is there a way for them to do that? And even more importantly, is there a way to make sure that it sticks?”

Many of these programs are federally funded, but donor support can help make the experiences better, Blobe said. “Offering team-building events, scientific skills courses, ability to take graduate level classes or computers to the participants — all of that is something that donors can help with,” he said.

At right are just a few examples of these efforts.

ANEESA SHAW

HACK BIO

CANCER CAREER EXPLORATION DAY

Who: Undergraduates from Minority Serving Institutions and Historically Black Colleges and Universities

What: A one-day visit to hear about career options at Duke Cancer Institute, as well as how to apply to medical school and graduate school.

The goal: Teach college students about careers in cancer care and research.

PRIME PREP PROGRAM

Who: Recent undergraduates from groups under-represented in medicine

What: They spend a year at Duke conducting research and participating in professional development activities.

The goal: Increase enrollment in graduate school among groups underrepresented in medicine.

HACK BIO

Who: Durham-area high school students from groups under-represented in science.

What: They visit Duke campus over four days to work together on projects related to human health and the environment, listen to speakers about topics such as college life and science communication, and work in teams to pitch a solution to an environmental problem to a panel of expert judges.

The goal: To get young people excited about careers in science.

DIVERSITY SUPPLEMENT MATCHING EVENT

Who: Undergraduates, recent graduates, graduate students, and postdocs from Duke and other universities who are members of groups underrepresented in medicine. Underrepresented groups include racial and ethnic groups, individuals with disabilities, and individuals from disadvantaged backgrounds.

What: A one-day event to match these trainees to Duke faculty who have a federal grant that is eligible for a diversity supplement (additional funding to support underrepresented scientists in biomedical and behavioral research).

The goal: Increase the number of Duke faculty who leverage diversity supplements to enhance work on their existing federal grant while contributing to training a diverse workforce.

PRIME SUMMER RESEARCH PROGRAM

Who: Rising college juniors and seniors

What: 8-week program in Duke Cancer Institute labs

The goal: Give promising undergraduates better understanding of how laboratory discoveries can be translated to cancer treatment.

YOU CAN HELP

You can make a difference for the next generation of cancer doctors and researchers. To make a gift, please use the enclosed envelope, or visit duke.is/DCIfall24 to give online

How Breast Cancer Spreads to the Brain

BY ANGELA SPIVEY

Postdoctoral associate **DANHUI MA** (left) spent countless hours learning new microscopy techniques under the guidance of Dorothy Sipkins to confirm how breast cancer spreads to the leptomeninges (membranes that protect the brain and spinal cord).

EAMON QUEENEY

ONCE CANCER GETS INSIDE THE INNER MEMBRANES THAT PROTECT THE BRAIN AND SPINAL CORD (the leptomeninges), the disease can circulate in the cerebrospinal fluid and spread throughout the central nervous system. The outcome for patients is devastating, with a median survival time of less than six months.

EAMON QUEENEY

Physician-scientist **DOROTHY SIPKINS** (left) and postdoctoral associate **DANHUI MA** in the lab.

That's why clinician-scientist Dorothy Sipkins, MD, PhD, and her team at Duke University School of Medicine have kept pushing for nearly 10 years to find out how cancer cells can get inside this vital compartment.

Now they have discovered a previously unknown shortcut that some breast cancer cells use to metastasize to the leptomeninges, as well as clues that suggest how to block this path. Their study was published in June 2024 in the journal *Science*, with an accompanying commentary.

SLIDING DOWN THE FIREMAN'S POLE

Sipkins, an associate professor of medicine, and her team showed in mice that breast cancer cells first infiltrated the bone marrow of the skull, then traveled via "emissary blood vessels." These vessels begin in the bone marrow, pass through normal openings or "windows" in the skull, then become part of the leptomeninges.

> "THESE TUMOR CELLS GRAB ONTO THE OUTSIDE OF THESE BLOOD VESSELS AND BASICALLY SHIMMY DOWN THE VESSEL LIKE A FIREMAN SLIDING DOWN A FIREMAN'S POLE."
>
> Dorothy Sipkins

"These tumor cells grab onto the outside of these blood vessels and basically shimmy down the vessel like a fireman sliding down a fireman's pole," said Sipkins, a member of Duke Cancer Institute.

The work suggests a potential way to prevent cancer cells from taking this shortcut. "The cells in our study expressed a receptor called integrin alpha6 that they use to grab onto a specific protein that encases these blood vessels. Our evidence suggests that this protein, laminin, greases the fireman's pole," she said.

PREVENTING THE SPREAD?

Sipkins hopes these findings will lead to a way to identify which women with breast-to-bone metastases are at highest risk for leptomeningeal disease. "If we can identify those patients by the presence of this marker integrin alpha6, could we prevent the spread?" she said. "And then for patients who already have the spread of the disease, what can we do for them?"

"We haven't moved the dial in many years in terms of improving treatments for breast cancer patients with leptomeningeal metastasis," Sipkins said. The disease is rare but is becoming more common as people live longer with breast cancer. "The symptoms that patients experience from this are debilitating. It's a terrible complication," she said.

After the team found out how breast cancer cells get inside the leptomeninges, they pushed further to figure out how the tumor cells survive there.

Using their tool of choice — confocal microscopy — the researchers peered into the meninges and saw that the cancers cells stuck close to a particular type of immune system cell called macrophages. Then the tumor cells stimulated the macrophages to secrete a protein (glial-derived neurotrophic factor) that is normally used to protect neurons (brain cells).

"We demonstrated that in our mouse models, glial-derived neurotrophic factor from meningeal macrophages was important for breast cancer cells to survive and proliferate, and to be successful in the meningeal microenvironment," Sipkins said. She hopes to use this knowledge to develop new treatments.

> "IF WE CAN IDENTIFY THOSE PATIENTS BY THE PRESENCE OF THIS MARKER INTEGRIN ALPHA6, COULD WE PREVENT THE SPREAD? AND THEN FOR PATIENTS WHO ALREADY HAVE THE SPREAD OF THE DISEASE, WHAT CAN WE DO FOR THEM?"
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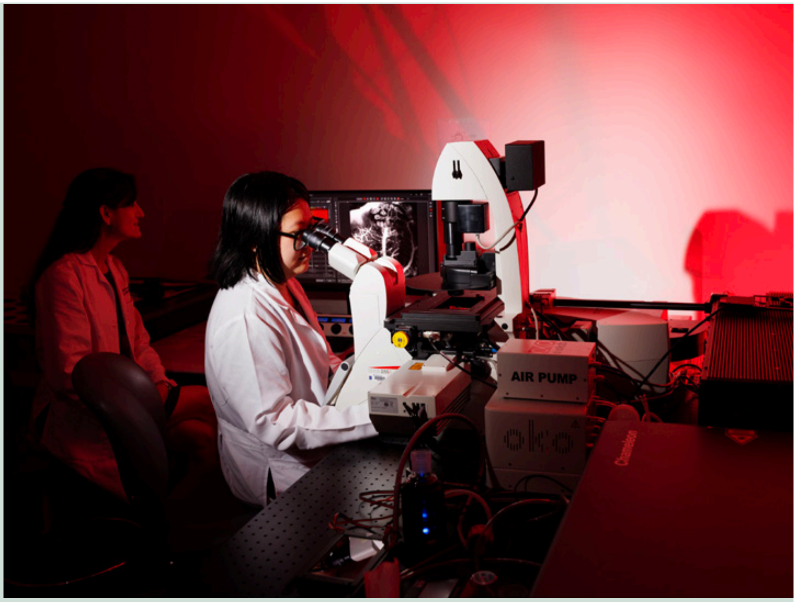

EAMON QUEENEY

KEY DONOR SUPPORT

Sipkins praised her team's dogged determination to find these answers. For example, post-doctoral associate Danhui Ma, PhD, spent countless hours learning new microscopy techniques and conducting final experiments, Sipkins said.

The initial work that went into this study would not have been possible without a philanthropic gift from David Wells, Sipkins said. Wells' wife Leslie passed away after a brief battle with leptomeningeal disease, which she fought with the help of the Duke Center for Brain and Spine Metastasis. He made the gift in her honor.

As a clinician, Sipkins treats patients with leukemia, and that is her main research focus. But she began studying breast cancer as well several years ago because it often spreads to the bone and bone marrow. This new study was inspired by some of her previous work in leukemia, in which she discovered that acute lymphoblastic leukemia cells can use this "fireman's pole" method to spread to the leptomeninges.

YOU CAN HELP

To make a gift to fuel more discoveries, please use the enclosed envelope or visit **duke.is/DCIfall24** to give online.

Helping Young Adults Move Forward after Cancer

BEING DIAGNOSED WITH CANCER AND GOING THROUGH TREATMENT ISN'T EASY FOR ANYONE. FOR PEOPLE DIAGNOSED AS YOUNG ADULTS (AGES 18-39), THE EXPERIENCE COMES WITH SOME UNIQUE CHALLENGES.

BY MARY-RUSSELL ROBERSON

“This is an age of transition,” said Caroline Dorfman, PhD, a clinical psychologist at the Duke Cancer Institute. People in this age group are often in the midst of reaching milestones such as graduation, landing a job, building a friend group, getting married, and having children, she said.

“One of the things we hear from our patients,” she said, “is that the cancer diagnosis stops them in their tracks from being able to move forward on life milestones.”

Even after treatment ends, life doesn't suddenly switch back to normal. Physical symptoms like pain and fatigue can linger, and emotional distress is common during the post-treatment period. Multiple follow-up appointments can present financial and logistical difficulties as well as emotional reminders of cancer.

“Sometimes they just want the cancer behind them and to get back to doing what matters to them,” Dorfman said. “The trouble is that when they are in the midst of treatment, they are just trying to get through it, and they don't stop to process the experience.”

That emotional processing often happens after the last chemo treatment or radiation session.

To support young adults during this vulnerable period, Dorfman has designed a 10-week program that aims to give them the tools they need to navigate physical and emotional symptoms and learn how to successfully manage their new lives as cancer survivors.

FILLING A GAP

In college, Dorfman decided she wanted to work at the intersection of psychology and oncology, partly because of her family history: her mother was diagnosed with breast cancer when Dorfman was in middle school. “It was interesting to me how different family members responded,” she said, “and to see how I navigated that, versus how my sister, my mom, and my aunts and uncles navigated it.”

In graduate school, she began to focus on ways to support the emotional wellbeing of cancer patients. “Once we understand the problem,” she said, “what can we do to help improve the experience of our patients through behavioral interventions?”

When she arrived at Duke as an intern in clinical psychology several years ago, she saw an unmet need among her patients: it became apparent that they could benefit from a structured system of post-treatment support tailored to their stage of life.

So she decided to design and test a program to do that.

Dorfman's post-treatment curriculum, delivered over the course of 10 weeks, teaches skills and strategies that have been shown to reduce emotional distress, pain, fatigue, or all three, including relaxation and meditation, strategies to improve self-talk, home-based exercise, and values-based decision-making and goal-setting. The program also includes strategies for improved communication with family, friends, and medical professionals. (See page 16 for more information about the program's content.)

EAMON QUEENEY

Cancer survivor **IRIS BUGBEE** with her husband, Greg, daughter Mila, and corgis, Candi and Charli, at her home in Fuquay Varina in 2024. Bugbee was part of a clinical trial aimed at helping young adults battling cancer to learn strategies to ease their post-treatment symptom burden through things like mindfulness and physical activity.

“We can educate patients on how normal it is to have continued symptom burden and how normal it is to feel like they are not achieving goals in the way they would like,” she said. “And we can provide them with tools to help them move forward on the important goals they have for their lives while navigating symptoms like pain or fatigue.”

The content is delivered via eight 90-minute virtual group sessions, supplemented by written material and a mobile app.

Dorfman successfully secured a National Institutes of Health (NIH) grant for early-stage investigators in 2019 to pilot the program. Her mentors during the design and application phase were Kevin Oeffinger, MD, professor in the Department of Medicine, and Rebecca Shelby, PhD, associate professor in the Department of Psychiatry and Behavioral Sciences.

Oeffinger, who has worked with young adult cancer survivors for 35 years, said that post-treatment symptoms in this group have been overlooked in the past. “Caroline is trying to fill that gap, both in her clinical program and her research program. What she is doing is incredibly important.”

LISTENING TO YOUNG ADULT CANCER SURVIVORS

Before designing the program, Dorfman interviewed young adult cancer survivors and cancer physicians to identify the most bothersome post-treatment symptoms, which were pain, fatigue, and emotional distress.

During those interviews, she also solicited ideas from the young adults about what kind of support they would like.

In addition to strategies for addressing their symptoms, young adults wanted information about how to communicate their needs to different groups, from people in their social networks to physicians. Unlike older adults, young people often haven't seen peers go through cancer treatment and haven't had a lot of experience asking for support or advocating for themselves in healthcare situations, or, in some cases, even going to the doctor by themselves.

“Some of these young adults have not had a need for regular primary care prior to their cancer diagnosis,” Oeffinger said. “Now, having gone through cancer, all of sudden they have new short-term and long-term risks. They really need to get engaged with the health care system.”

In their day-to-day interactions with bosses, colleagues, and teachers, young adults wanted tips for how to ask for certain accommodations.

Based on this input, Dorfman made sure her program included strategies for assertive communication – with family, peers, teachers, colleagues, and health care providers.

"Sometimes people in their social network said things that were really unhelpful," Dorfman said. "So we provided strategies for understanding who is in their social network and how to make requests to that network so they could get what they needed."

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BUILDING ON WHAT WORKS

The pilot included 61 participants, and the results were encouraging. "We found really high satisfaction," Dorfman said. "Folks enjoyed it and would recommend it to other people who also had cancer who were similarly aged."

Not only did participants like the program, but their symptoms became less burdensome.

An important feature of Dorfman's program is the delivery as a package of sessions, each of which builds on the one before. At the Duke Cancer Institute, young adult cancer survivors, like all cancer survivors, already have a wealth of supports in place, from support groups to individual counseling. But these resources are offered a la carte and on-demand; it's up to each patient to pick and choose.

Dorfman's program stands out because of its structure as a curriculum that covers a range of skills and topics over 10 weeks. "What's unique is the packaging," Dorfman said. "These strategies in this combination have not been evaluated before."

Now that the pilot has demonstrated promise and proved itself to be feasible, Dorfman has applied for and received a larger, five-year NIH grant to test the efficacy of the program with about 250 participants.

"One of the things we hear from our patients is that the cancer diagnosis stops them in their tracks from being able to move forward on life milestones."

Caroline Dorfman

Based on the pilot, Dorfman plans to tweak a few details — using individual instead of group sessions to increase flexibility in scheduling, reducing the number of sessions to six, and adding even more strategies to help participants gain confidence in being active participants in their ongoing medical care.

If the program proves to be effective in this larger group of people, Dorfman hopes it will be used regularly as part of the Duke Cancer Patient Support Program — and beyond.

The package, with its written materials and structured curriculum, could easily be shared with other institutions.

Oeffinger expects that's exactly what will happen. "This study has incredible potential," he said, "both within the Duke community and wherever young adults are treated for cancer."

For more information about the trial of the support program, patients can contact study coordinator Michael Willis, Michael.w.willis@duke.edu, or 919-681-8437.

Structured Support to Young Adult Cancer Survivors Post-Treatment

Some of the components in the 8-Session Series

Physical Activity for Symptom Management
- Home-based physical activity prescription and an activity tracker
- Using activity-rest cycling to avoid exhaustion

Relaxation and Meditation Practices for Symptom Management
- Progressive muscle relaxation
- Loving-kindness meditation
- Mini-relaxation practices
- Pleasant imagery

Behavioral and Cognitive Skills
- Self-compassion
- Identifying unhelpful thoughts
- Strategies to become "unhooked" from unhelpful thoughts

Communication Skills
- Identifying sources of support among family, peers, and others
- Assertive communication
- Workplace and school-based communication
- Communicating with the health care team

Values-Based Practices
- Identifying values
- Setting goals consistent with values
- Meaning making (making sense of the experience)
- Building a legacy
- Planning to maintain progress

STOPPING TO THINK

In 2022, when Iris Bugbee, MS, CCC-SLP, was diagnosed with breast cancer at age 34, she had a lot to think about besides cancer. Working full time as a speech language pathologist and caring for her then-two-year-old daughter, Mila, occupied her days. She took nearly six weeks off for surgery, but she worked throughout the rest of her treatment, just reducing her hours.

Bugbee, who lives in Fuquay Varina, North Carolina, and was treated at Duke Women's Cancer Care Raleigh, fit radiation appointments in between patients. She works with adults and older people who have speech or swallowing issues. "I would go to work, travel to Raleigh, and then come back and see the rest of my patients," she said. "I was going through treatment and doing what I could for my patients and then what I could as a parent at home. I didn't think a whole lot about my own treatment or diagnosis."

One year after her mastectomy, when a nurse called asking if she'd be willing to participate in a clinical trial of a new, structured support program for young adult cancer survivors, Bugbee said yes. She wanted to get stronger physically, and she saw it as a good way to get motivated. She had exercised regularly before surgery but had not been exercising at all since. She had developed cording syndrome (inflammation, scarring, and hardening of the tissue that can happen as a side effect of surgery), and she was having trouble with range of motion in her right arm. Cleaning, picking up her daughter, and even typing at work were challenging.

The program encouraged her to plan and set goals, to start slowly to regain strength and to go easy on herself. "When I started this program that's when I began walking and stretching and building off of that," she said.

The sessions also helped Bugbee begin to process all that happened to her. She said that the support group, which was held online, felt less like a mandatory class and more like a chat with her peers. "It was nice to see the perspective of other cancer survivors who are in the middle of this part of their life – raising a family or in the middle of their careers," she said. "Hearing everyone's experiences and their challenges made me feel like, 'Okay, yeah, I'm not the only one.' The two psychologist who ran the support program were inviting and gentle, and they just made you want to share."

–Angela Spivey

EAMON QUEENEY

"Some of these young adults have not had a need for regular primary care prior to their cancer diagnosis. Now, having gone through cancer, all of sudden they have new short-term and long-term risks. They really need to get engaged with the health care system."

Kevin Oeffinger

YOU CAN HELP

To support DCI's life-changing research, use the enclosed envelope or visit **duke.is/DCIfall24** to give online. Every gift makes a difference!

DCI FRIENDS

The 16th annual **STRIKE OUT FOR SARCOMA RUN/WALK** September 8 at WakeMed Soccer Park in Cary raised awareness for the rare disease and brought in $71,658 to help find a cure. Oncology nurse **OLIVIA FRANKEL** said that her volunteers donated close to 100 hours to produce the event.

The **SARCOMA SLUGGERS** won the most awards, with over 40 members cheering on their baseball coach, **BOBBY NORRIS**, who had been coaching a West Raleigh Baseball league team for five years when he was diagnosed with sarcoma. A group of young boys wearing Sluggers t-shirts jumped up and down wildly when he walked across the finish line, using a cane. Here, Norris and his wife, Carolyn.

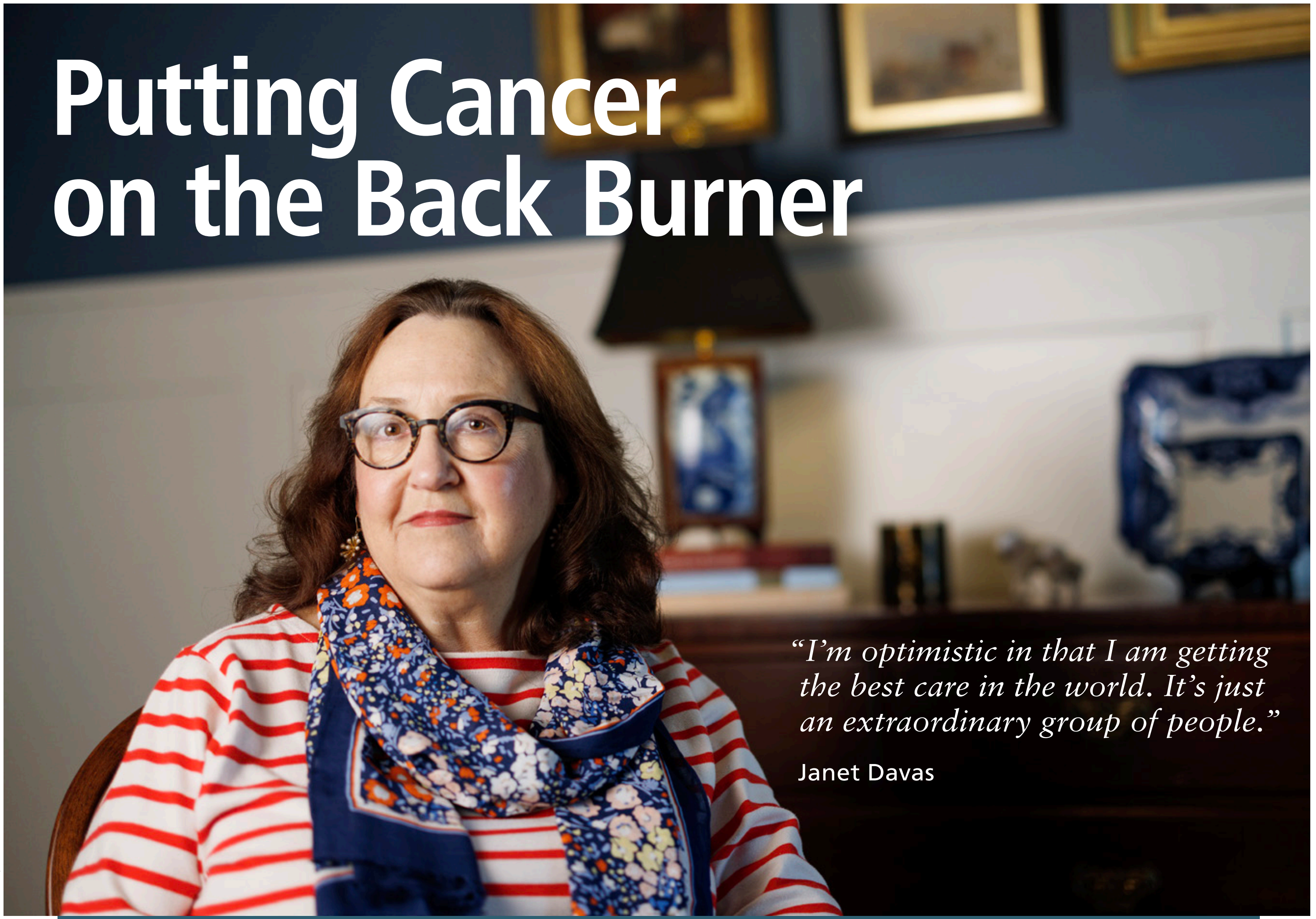
WANDA FARRELL with **WANDA'S WARRIORS,** who won the award for the most creatively dressed team.

ANDREW BERCHUCK, MD, (far right) with golfers.

Organizer and DCI Board member **CARLTON MANER** (far left) with golfers.

The **6TH ANNUAL TEE OFF VS CANCER** at the Golf Club of Georgia on September 17 raised more than $241,000 for research at Duke Cancer Institute. This year the largest field of golfers yet — over 170 players — hit the links and listened to speakers including **TED ALYEA, MD,** chief medical officer at DCI; **ANDREW BERCHUCK, MD,** James M. Engram Distinguished Professor of Gynecologic Oncology; and **DAN GEORGE, MD,** Eleanor Easley Distinguished Professor in the School of Medicine. This year's event brings the total raised since its inception to $1,013,553. Thanks go to DCI Board members **RICK GIERYN, MICHAEL FIELDS**, and **CARLTON MANER** for once again organizing and hosting this fantastic day.

Putting Cancer on the Back Burner



EAMON QUEENEY

> *"I'm optimistic in that I am getting the best care in the world. It's just an extraordinary group of people."*
>
> Janet Davas

Janet Davas has always been a "doer." After nearly 30 years working in the private energy sector, she turned her energy to social entrepreneurship, launching Liberty's Kitchen, which offered a job development program to at-risk youth in New Orleans. Then she launched a social entrepreneurship consulting business.

So, in 2020, when faced with a devastating diagnosis — previously treated breast cancer that had metastasized to her brain, spine, and bones — Davas retired from work, but she was determined to keep on "doing."

Though it's not without challenges, four years after her diagnosis, she lives a full life. She relishes time spent with her friends and family, goes "picking" for her hobby antiques business around the country, and has traveled internationally at least twice a year since COVID restrictions were lifted.

"I haven't let cancer define me," she said.

She gives much of the credit to the care she receives at the Duke Center for Brain and Spine Metastasis, where she is treated with a targeted therapy and a team approach. On her first visit to Duke in 2021, Davas met her entire team, including medical oncologist Carey Anders, MD; radiation oncologist John Kirkpatrick, MD; patient navigator Sidonie Magee; and palliative care specialist Betsy Fricklas. She has one word for the experience: "impressive."

In 2024, Davas moved from Asheville, North Carolina, to Durham, to be closer to Duke. "I'm not Pollyanna in thinking that I would ever live forever or that this isn't going to take my life eventually," she said. "But I'm optimistic in that I am getting the best care in the world."

In gratitude, Davas made an estate bequest to benefit the Duke Center for Brain and Spine Metastasis. "It's just an extraordinary group of people," she said. "And I want the money to go where it will help others."

To learn more about making a planned gift to DCI, please contact Michelle Cohen, executive director of development, at 919-385-3124 or michelle.cohen@duke.edu.

Duke Cancer Institute

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A SEASON OF HOPE

As the season of goodwill approaches, the night sky will once again glow with light from the Tree of Hope at Duke Cancer Center. The tree honors and remembers loved ones, patients, family, friends, and health care team members whose lives have been touched by cancer.

After the lighting ceremony on December 5, luminaries will remain lit around the Tree of Hope at **Duke Cancer Center** and at **Duke Cancer Center Raleigh** until December 31.

To purchase a luminary in honor of a loved one, please visit **duke.is/TreeOfHope** and chose the "Luminaries" button. All proceeds benefit the Duke Cancer Patient Support Program to fund cancer support services at no cost for families facing cancer.