THE MAGAZINE OF VANDERBILT-INGRAM CANCER CENTER

Momentum

SPRING 26

Hidden Signals

Circulating tumor DNA holds hope for personalizing breast cancer care

Editor
Tom Wilemon

Contributing Writers
Danny Bonvissuto, Paul Govern, Leigh MacMillan, Larry Marnett, Tom Wilemon

Photography/Illustration
Daniel Dubois, Donn Jones, Erin O. Smith, Susan Urmy

Design & Art Direction
Diana Duren

Director of Publications
Christina Echegaray

Executive Director of Digital Publications
Wayne Wood

Cover Photograph
Susan Urmy

Editorial Office
Vanderbilt Health
Office of News and Communications
T-5200 Medical Center North
Nashville, TN 37232-2390
615-322-4747

Advisory Board
Ben Ho Park, MD, PhD, Orrin Ingram, Theresa Sberna, MPH, Deb Friedman, MD, Laura Goff, MD, Beth Jones, MA, Clayton Marshall, PhD, Amy Hayes, BSN, RN, OCN, Sydnie Hochstein, MS, Julie Bulger, Camille Savell, MS, Abby Thompson

Key Telephone Numbers
For Physicians
Local: 615-343-3700
Toll-Free: 877-6MD-VICC
(877-663-8422)

For Patients - 24 hrs/day - 7 days/wk
Local: 615-936-VICC (615-936-8422)
Toll-Free: 877-936-VICC
(877-936-8422)

Clinical Trials Information
Local: 615-936-5847
Toll-Free: 800-811-8480

On the cover:
Laura Nasca had a blood test to look for circulating breast cancer DNA — the results changed her treatment and may have saved her life.

Contents

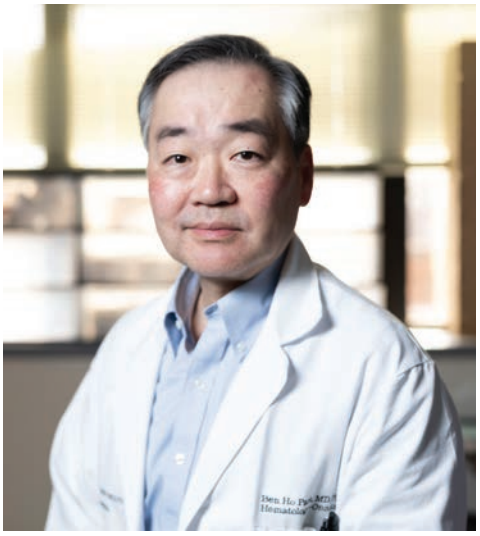
Spring 2026

Features

Departments

From the Director

BEN HO PARK, MD, PHD



SUSAN URMY

Every cancer is different. As clinicians we should not make assumptions about one patient's cancer based solely upon how a cancer most commonly manifests itself in other patients. We must be diligent in delivering personalized care.

The stories in this issue of *Momentum* have a common thread that details the importance of treating people in a personalized manner, according to the latest clinical diagnostics and each patient's priorities, particularly as they relate to quality of life, future aspirations, and family history. Our cover story is about how new diagnostic technologies, such as tests for fragments of circulating tumor DNA, can guide care decisions. These liquid biopsies for patients during cancer treatment can identify hidden cancer cells that may differ from the ones found in tissue samples. This difference matters because cancer can recur if therapies do not get rid of the cancer cells. Liquid biopsies are an emerging care paradigm and one that Vanderbilt-Ingram Cancer Center has embraced. Searching for and scrutinizing these cell fragments is especially crucial with breast cancer because it is a heterogeneous disease that can have widely differing cell populations within a single tumor.

Clinicians also need to take the time to get to know their patients and to be thorough in providing personalized care. One story in this issue is about how a Vanderbilt Health physician ordered an extra test that detected early-stage kidney cancer that would have otherwise gone undiagnosed because she knew about her patient's family history with the disease. In a personal essay, also in this issue, a patient shares about his doctor insisting on an MRI to double check if his prostate cancer required more aggressive treatment even though he had a low Gleason score, a score that usually denotes a very indolent type of prostate cancer. The doctor's diligence changed the course of treatment from active surveillance to radiation therapy.

Another story is about tailoring the sequence of surgery and chemotherapy according to a patient's preferences during the treatment course of metaplastic breast cancer, which is a rare cancer, rather than following a standard protocol for more typical breast cancers.

Rare cancers are among the early-onset cancers with rising incidence rates in younger people. Too often, these cancers are diagnosed at late stages because clinicians discount the probability of their occurrence in younger people. An article in this issue details the valiant response of a 40-year-old woman to her Stage 4 diagnosis of appendix cancer — a diagnosis that came after her symptoms had perplexed doctors. The needs of younger patients can differ from those of older patients. One example is fertility preservation. A young leukemia patient shares her story about how freezing her eggs allowed her to become pregnant after her cancer treatment. Our doctors counsel patients about fertility preservation, and Vanderbilt Health is expanding its services to better serve these patients.

Cancer treatments cause unwelcome side effects that can range from weight loss to pain.

"As clinicians we should not make assumptions about one patient's cancer based solely upon how a cancer most commonly manifests itself in other patients."

Many patients prefer integrative therapies, such as nutrition counseling, mindfulness, and acupuncture, to deal with these side effects. An Integrative Oncology program has been developed in cooperation with Vanderbilt-Ingram Cancer Center's Supportive and Palliative Oncology Clinic to meet these needs. An article in this issue outlines the personalized care offerings of this program.

We do more than treat cancer at Vanderbilt-Ingram. We provide personalized care for people. We know that every person is unique, and we strive to tailor therapies and supportive care for every patient.

ADOBE STOCK/DIANA DUREN

Double Check

Women should also undergo lung cancer scans with mammogram outreach

WHILE MOST WOMEN over age 50 schedule mammograms for breast cancer, only a minority who are also eligible for CT scans for lung cancer undergo those potentially lifesaving screenings. A new study shows that targeted outreach can close the gap. The study, published Dec. 1, 2025, in the *Journal of the American College of Radiology*, showed that the improvement in lung cancer screenings exceeded the target enrollment set by researchers. The study also demonstrated that two different types of outreach initiatives were effective in increasing uptake. "For years, we have recognized that many women screened for breast cancer are in fact dying from lung cancer. This study allowed us the opportunity to inform women and their referring providers of lung screening eligibility and to facilitate lung screening exams," said **Kim Sandler, MD**, professor of Radiology and Radiological Sciences. ■

FOR MORE NEWS, GO TO WWW.VICC.ORG

VANDERBILT-INGRAM CITED AS TOP ONCOLOGY PROVIDER

Vanderbilt University Medical Center is one of two facilities in Tennessee recognized by *Becker's Hospital Review* as "hospitals and health systems with great oncology programs" for 2025.

"Vanderbilt-Ingram Cancer Center, part of Vanderbilt University Medical Center, is the only NCI-designated comprehensive cancer center in Tennessee that provides care for both adults and children," *Becker's Hospital Review* noted. "Recognized by *U.S. News & World Report* as a top-performing cancer hospital, Vanderbilt-Ingram serves more than 49,000 distinct patients and manages over 250,000 outpatient visits annually. With a team of more than 200 cancer specialists and over 300 physician-scientists, the center leads in precision medicine and translational research, supported by more than $150 million in total research funding, including $69 million in competitive NCI grants.

"Vanderbilt-Ingram offers access to more than 350 clinical trials and is the developer of MyCancerGenome.org, a globally recognized resource for genetically informed cancer care. As a member of the National Comprehensive Cancer Network, Vanderbilt-Ingram helps shape national standards in cancer prevention, treatment and survivorship care."

The other Tennessee hospital that made the list is Memphis-based St. Jude Children's Research Hospital. ■

Milestone achieved

100th histotripsy performed

Vanderbilt Health recently performed its 100th histotripsy, a noninvasive procedure in which highly focused ultrasound waves are directed at liver tumors to destroy cancer without ever making an incision.

The recipient, Aaron Davis of Cleveland, Tennessee, had just celebrated his 52nd birthday days before the procedure and was surrounded in the Vanderbilt University Hospital operating room by a surgical team he's come to greatly admire.

Sekhar Padmanabhan, MD, assistant professor of Surgery, performed the procedure, in which a tub of water held over Davis' abdomen served as the medium through which the ultrasound waves passed. In histotripsy, the focused ultrasound energy causes small gas bubbles in the tissue to rapidly expand and contract. This process forms a "bubble cloud," forcing the targeted tumors to be liquified while avoiding damage to other tissue.

"Histotripsy is a novel procedure, but one that shows a great deal of promise," said Padmanabhan. "Thanks to generous philanthropic support, we're building a world-class program to continue offering this technology to patients who can benefit from a noninvasive surgical option that yields excellent results."

Vanderbilt-Ingram Cancer Center is among the first institutions to offer histotripsy. Appealing to patients for its noninvasive nature, it avoids many of the traditional drawbacks of surgeries that use incisions, including pain management.

"When I had my liver resection, that was some of the worst pain I've ever felt in my life," said Davis. "And I'm allergic to many pain medications, too. Being able to get put to sleep for surgery and wake up without the pain of having my abdomen cut open changes everything."

Davis had previously been in Padmanabhan's care to receive a hepatic artery infusion pump, which successfully delivered high doses of chemotherapy to his liver while minimizing toxicity to the rest of his body. And although the cancer returned, Davis knew he was in good hands with Padmanabhan and Kristen Ciombor, MD, MSCI, associate professor of Medicine in the Division of Hematology and Oncology, who eventually helped him settle on histotripsy as the best option to treat his latest recurrence of cancer.

"The doctors at Vanderbilt-Ingram Cancer Center changed my life," said Davis. "Having a care team who knew exactly what I needed and recognized that a newer procedure could help me has given me hope that I can continue fighting cancer." ■

DONN JONES

Clinicians with the histotripsy surgical team pose for a photograph with Aaron Davis, the 100th patient to undergo the procedure at Vanderbilt Health.

PHOTO COURTESY OF DOLLY PARTON

Song for Children

Dolly Parton honors milestone birthday by releasing song to support pediatric cancer research

In celebration of her milestone 80th birthday Jan. 19, global superstar Dolly Parton released a powerful new rendition of her classic hit "Light of a Clear Blue Morning," featuring Lainey Wilson, Miley Cyrus, Queen Latifah and Reba McEntire, on the 50th anniversary of writing the song.

The single and music video, which also features David Foster on piano and The Christ Church Choir on backing vocals, released Friday, Jan. 16, just days before her birthday. This recording reimagines the song with a message of spreading love and hope.

Originally written and recorded in 1976 during a period of personal transition and renewed optimism, "Light of a Clear Blue Morning" has long stood as one of Parton's most inspirational works. Now, five decades later, Dolly revisits the song for a new generation with a powerhouse lineup of female voices.

"I wrote 'Light of A Clear Blue Morning' during a season when I was searching for hope, and 50 years later that message still feels just as true," Parton said. "As I celebrate my 80th birthday, this new version is my way of using what I've been blessed with to shine a little light forward, especially by sharing it with some truly incredible women."

In keeping with the spirit of giving that has defined her career, net proceeds from the single and its accompanying music video will benefit the pediatric cancer research program at Monroe Carell Jr. Children's Hospital at Vanderbilt, a longtime cause close to Parton's heart.

Parton has been a steadfast supporter of Monroe Carell and Vanderbilt Health for many years, including pediatric cancer research.

"With Dolly's generous support to the pediatric cancer program, we have been able to make advances in the treatment and supportive care for children with cancer and provide care in a positive and welcoming environment," said Debra Friedman, MD, MS, director of the Division of Pediatric Hematology/Oncology, deputy director for Vanderbilt-Ingram and holder of the E. Bronson Ingram Chair in Pediatric Oncology. "I am so grateful for this new gift. We look forward to the new rendition of 'Light of a Clear Blue Morning' and working with Dolly to expand on our efforts to improve outcomes for children and their families living with, through and after a diagnosis of cancer. Our best wishes to Dolly on her 80th birthday!"

The song was written by Dolly Parton, produced by Dolly Parton alongside Kent Wells, and mixed by Chris Lord-Alge. This new rendition also features the legendary David Foster on piano and includes backing vocals by The Christ Church Choir.

The release marks not only a celebration of Parton's extraordinary life and legacy, but also a continuation of her lifelong commitment to using music as a force for good. ■

LISTEN: "Light of a Clear Blue Morning" featuring Lainey Wilson, Miley Cyrus, Queen Latifah and Reba McEntire. To hear the song, visit dolly.lnk.to/LightOfAClearBlueMorning-Vanderbilt or scan code.

RESEARCH GIVES INSIGHT ON RARE PEDIATRIC CANCER

Pediatric-type, low-grade gliomas (PLGG) are the most common central nervous system tumors in children, but in rare cases the tumors spread — known as disseminated pediatric low-grade gliomas (DPLGGs) — which leads to increased morbidity and mortality.

Researchers, led by Michael Dewan, MD, MSCI, compiled an international cohort of more than 260 DPLGG patients from 39 sites and 13 countries to study why low-grade brain tumors behave aggressively, as well as to identify the causative genetic alteration. The study was published in *Neuro-Oncology*.

"Our findings will help predict which children are at an elevated risk of developing disseminated low-grade gliomas as well as serve as a guide toward a more effective, personalized treatment," said Dewan, associate professor of Neurological Surgery and Pediatrics at Monroe Carell Jr. Children's Hospital at Vanderbilt.

"Not all childhood brain tumors that look low-grade act the same. This study expands our understanding of the clinical, pathologic and molecular features of this challenging disease. We found that when these tumors spread early or widely — especially in young children — outcomes are worse, but newer, targeted drugs work better than standard chemotherapy for many patients."

Study findings inform prognosis and treatment decisions, particularly by supporting the earlier use of targeted, less-invasive therapies that may enhance survival and reduce treatment toxicity for children. ■

Continued Success

SPORE grant funds $12 million for colorectal cancer research

A colorectal cancer research team led by Robert Coffey, MD, has received a prestigious Specialized Programs of Research Excellence (SPORE) grant renewal totaling $12.6 million from the National Cancer Institute (NCI) for a five-year period.

The grant marks ongoing funding of the GI SPORE awarded to Coffey's team, which dates back to its inception at Vanderbilt-Ingram Cancer Center in 2002. Currently, Vanderbilt-Ingram is one of only four cancer centers in the United States with GI Cancer SPORE funding. The team has made numerous discoveries over the past 23 years, and it plans to build upon those achievements with the goal of "drugging the undruggable."

Applications for SPORE funding are intensely competitive. SPORE grants are highly sought after because they show that a cancer center demonstrates scientific excellence, promotes collaboration, maintains robust research programs and merits substantial funding — factors that are key determinants for an NCI designation as a Comprehensive Cancer Center.

"Our success is built upon clinical and basic investigators working closely together with patient advocates," said Coffey, Ingram Professor of Cancer Research, professor of Medicine and of Cell and Developmental Biology, and co-director of the Epithelial Biology Center.

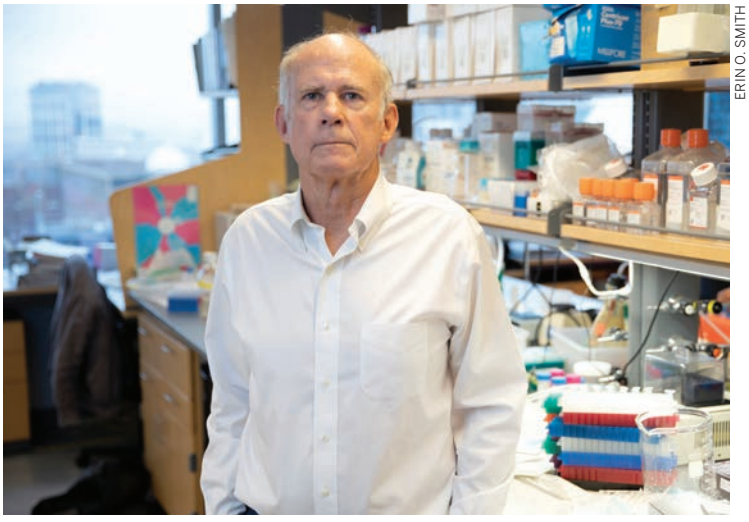
Coffey, the grant's principal investigator, is joined by clinical co-leaders, basic science co-leaders, and patient advocates in pursuing three projects that are aimed at targeting three mechanisms of colorectal cancer progression: immune exclusion, MYC activation, and Wnt pathway activation. Each project has an embedded patient advocate to ensure that each project is focused on its translational goal.

"Securing SPORE funding is an achievement to be recognized, but having a program funded for 23 years is truly outstanding," said Ben Ho Park, MD, PhD, the Benjamin F. Byrd Jr. Professor of Oncology and director of Vanderbilt-Ingram. "Congratulations go to Dr. Coffey, the principal investigator, and to the entire research team for a job well done. With this grant renewal, they are building upon years of rigorous and innovative research and are making great progress toward developing new therapies for gastrointestinal cancers that are recalcitrant to current treatment modalities."

The GI SPORE grant also cultivates future scientific advancement through the Career Enhancement Program at Vanderbilt-Ingram, which recruits young investigators and helps them develop into independent researchers. Participants can apply for seed funding — small grants that help them establish the basis for research achievements that merit additional funding.

These programs are led by Karen Winkfield, MD, PhD, associate director for Community Outreach and Engagement at Vanderbilt-Ingram, Ingram Professor of Cancer Research and professor of Radiation Oncology, and Richard Peek, MD, the Mina Cobb Wallace Professor of Immunology and professor of Medicine and Pathology, Microbiology and Immunology.

Overall, this grant is a large accomplishment that shows the importance of team science and collaboration of basic and clinical leaders together with patient advocates to propel advances in the diagnosis and treatment of GI malignancies. ■



ERIN O. SMITH

Robert Coffey, MD, Ingram Professor of Cancer Research, professor of Medicine and of Cell and Developmental Biology, and co-director of the Epithelial Biology Center.

Q|A

Advice on smoking cessation

Quitting a tobacco habit is easier with clinical guidance

PHOTOGRAPH BY **DANIEL DUBOIS**

Hilary Tindle, MD, MPH, the William Anderson Spickard Jr., MD Professor of Medicine, is a physician who specializes in tobacco addiction and researches clinical approaches to quitting smoking.

Q What resources are available for someone who wants to quit smoking?

A First, tell your health care provider that you want to quit smoking and would like their help. In addition to your doctor, there are several resources. The newest is the tobacco treatment clinic at the Vanderbilt Lung Institute, which has dedicated tobacco treatment counselors who offer telehealth and in-person appointments. The Tennessee Tobacco QuitLine also offers free counseling and medication and can be accessed by calling 800-QUIT-NOW. Another great resource is Smokefree.gov, a website operated by the National Cancer Institute. Smokefree.gov has excellent information, tips and free tools such as texting and phone apps for iPhone or Android.

Q How important is it to seek assistance and guidance?

A Using counseling and proven medication to quit smoking is very important. About 25 million U.S. adults currently smoke cigarettes, and over half try to quit each year, but fewer than 1% use counseling and medication. That means 99% of people trying to quit smoking are not getting the help they need. Unfortunately, 95% of people who try to quit without help are unsuccessful. The good news is that using counseling and medication can triple odds of success.

Q Can you tell us more about medication for smoking cessation?

A Nicotine replacement therapy is the most used medicine to quit smoking, and it comes in several forms including the patch, gum, lozenge and nasal spray. The patch is long-acting and provides a steady amount of nicotine all day. The other three forms are short-acting and can be used alongside the patch. Combining two forms of nicotine replacement — long-acting patch plus short-acting gum, lozenge or spray — yields higher success than using one form alone. Of the nicotine replacement options, only nasal spray requires a prescription.

Q Are there other prescription medications for smoking cessation?

A Varenicline (brand name Chantix) is also highly effective. A third option is bupropion. Future smoking cessation medications are in the pipeline but are not yet approved by the Food and Drug Administration.

Q How soon do people benefit from quitting?

A The benefits of quitting smoking begin immediately. In the first 20 minutes, blood pressure and heart rate normalize. Within 12 hours, carbon monoxide levels drop to normal. Within days to weeks, breathing and circulation improve, and within one year, heart attack risk drops by 50%. The benefits to your pocketbook also begin immediately and continue to grow.

Q Do you have any advice for people who have tried to quit smoking without success?

A Yes. First, use a combination of counseling and proven medication to support your quit attempt. Second, know that more than 3 out of 5 people in the U.S. who ever smoked have already quit, and you can too. Third, persistence is key: Most people who quit smoking had to try five or more times. No matter what, do not give up. Keep trying! ■

"About 25 million U.S. adults currently smoke cigarettes, and over half try to quit each year, but fewer than 1% use counseling and medication."

— HILARY TINDLE, MD, MPH

New Therapy

Patient with melanoma receives tumor-infiltrating lymphocyte therapy

STORY BY **TOM WILEMON**
PHOTO BY **ERIN O. SMITH**

Vanderbilt-Ingram Cancer Center has treated its first patient in a newly launched therapy program that magnifies the power of a person's natural defense system against tumors.

Tumor-infiltrating lymphocyte (TIL) therapy involves isolating the white blood cells from a tumor after it is surgically removed, expanding the magnitude of those cells in a laboratory, and then infusing them back into the patient to elicit a more powerful counterattack. The highly personalized treatment is currently approved for patients with advanced stages of melanoma whose tumors have grown despite immunotherapies and/or targeted therapies.

The patient who received the therapy in late January has melanoma that has spread to the bone, abdomen, liver and brain despite multiple lines of other treatments. A team of clinicians harvested white blood cells from a tumor in the patient's liver, then shipped them to a laboratory where they were supercharged before being infused back into the patient, who is being monitored. Additional patients are scheduled to receive TIL therapy. Vanderbilt-Ingram launched the program as a standard of care service line after previously treating patients with TIL therapy in clinical trials.

"The mission of Vanderbilt Health is to get treatments that are cutting-edge to the patients who need them the most," said Olalekan Oluwole, MBBS, MPH, associate professor of Medicine and a hematologist who specializes in cellular therapies. "Some of these patients have exhausted prior standard of care options."

About a third of patients who receive TIL therapy respond to it.

"On the surface that doesn't sound like a lot, but the great thing about TIL therapy is when it does work, it can lead to long-term durable response. It can keep right on working for years or even indefinitely," said Douglas Johnson, MD, MSCI, professor of Medicine and clinical director of melanoma, who holds the Susan and Luke Simons Directorship.

Establishing the TIL program required assembling a team of multidisciplinary clinicians trained to handle the care needs of patients while simultaneously handling the logistics of getting their white blood cells shipped to a laboratory.

Sarah Moseley, BSN, RN, the coordinator for immune effector cell and gene therapy patient care, led that process. She described the process of navigating care for patients who receive TIL therapy, which involves surgeons, oncologists, hematologists and specialized nurses.

"I am with the patient from start to finish," Moseley said. "Once a patient is identified by Dr. Johnson, he immediately gets me involved. The patient has to be approved by our cell therapy team and our surgery team as well as Dr. Johnson to make sure that they're a good candidate. The next step is the insurance process, which is probably the hardest part because this is a new and expensive therapy. It is a detailed process involving our financial team, our managed care team and us nurses as well."

The nurses serving as patient care coordinators also include Leslie Mader, BSN, RN, OCN, and Brittney Baer, BSN, RN.

"I or one of my nurse colleagues go to the surgery, and we transport the specimen from the operating room to the processing lab, where a courier picks it up," Moseley said. "Without the specimen, there is no product for the therapy. It has to be done quickly, and it must be done right every time. Then we get the patients set up for cell infusion after about five to six weeks."

The launch of the TIL program is the latest achievement in cellular therapies for Vanderbilt-Ingram, which is an international leader in the field. The cancer center offered clinical trials for therapies, which became standards of care, most notably CAR-T, which is shorthand for chimeric antigen receptor T-cell therapy. Vanderbilt-Ingram established an outpatient protocol for patients to receive CAR-T and treats more patients with this immunotherapy than any other provider in the state. It is offering clinical trials to expand the treatment for additional types of cancer and to make it more easily accessible to patients.

"The launch of our TIL program represents a natural and important evolution of Vanderbilt-Ingram's leadership in cellular therapy," said Ben Ho Park, MD, PhD, the Benjamin F. Byrd Jr. Professor of Oncology, professor of Medicine and director of Vanderbilt-Ingram. "Building on the infrastructure, clinical expertise and multidisciplinary coordination established through our CAR-T program, we are now able to offer another highly personalized immunotherapy to patients with otherwise limited options. Our goal is not only to deliver these complex therapies safely and effectively, but also to continue advancing the science so that more patients, across more cancer types, can benefit in the years ahead."

Clinicians with the cellular therapy team built the TIL program on the foundation of the CAR-T program. However, there are major differences between these treatment modalities. With CAR-T, immune cells are reengineered to attack cancer from the T cells in a patient's blood. With TIL therapy, white blood cells are taken from a patient's tumor and are then multiplied so they can stage a better counterattack against cancer. ■

Olalekan Oluwole, MBBS, MPH, left, and Douglas Johnson, MD, MSCI.

William Tansey, PhD, Ingram Professor of Cancer Research and professor of Cell and Developmental Biology, has been named associate director for Shared Resources. He will oversee 10 resources: animal and human imaging; bioanalytics and proteomics; chemical synthesis and high-throughput analytics; cell imaging; data science; flow cytometry; genome editing; genomic sciences; survey and biospecimen; and translational pathology. In addition to his leadership roles at Vanderbilt-Ingram Cancer Center, Tansey has an active research lab that focuses on transcriptional dysregulation in cancer cells.

Douglas Johnson, MD, MSCI, professor of Medicine and holder of the Susan and Luke Simons Directorship, has been named associate director for Translational Research. He will oversee the implementation of emerging treatments and therapy advancements, such as cellular therapies, immunotherapies and targeted therapies. Johnson, who is clinical director of melanoma at Vanderbilt-Ingram, has expertise in this realm, having been an investigator on early clinical trials for immunotherapies and having recently implemented a tumor-infiltrating lymphocyte therapy service line for patients.

Douglas Kojetin, PhD, Ingram Associate Professor of Cancer Research and associate professor of Biochemistry, will join two other experts as co-leader of the Genome Maintenance Research Program. He joins Tansey and David Cortez, PhD, the Hortense B. Ingram Professor of Cancer Research and chair of the Department of Biochemistry, at the helm. The Genome Maintenance Research Program focuses on understanding how DNA is damaged, repaired, packaged, expressed and replicated. These are processes that have roles in carcinogenesis.

Kristen Ciombor, MD, MSCI, Ingram Associate Professor of Cancer Research and associate professor of Medicine, has been named co-leader of the Gastrointestinal Cancer Research Program. She brings a wealth of knowledge to this role, having previously been co-leader of the Translational Research and Interventional Oncology Research Program. She is nationally and internationally recognized for her clinical research program and clinical expertise in colon cancer. Ciombor also serves as the principal investigator for the National Cancer Institute-funded National Clinical Trials Network Lead Academic Participating Site grant at Vanderbilt-Ingram.

Cody Stubblefield, RN, OCN, works in the cancer infusion center at Vanderbilt-Ingram Cancer Center and is a Vanderbilt Health DAISY Award winner. A 21-year-old patient with small veins nominated him for the honor after he came to the rescue whenever the patient needed an IV for chemotherapy. "He was reassuring and successful in getting my treatment going. Every. Single. Time. He knew how to keep me calm and made the process so much better overall," the patient wrote. The DAISY Award is a recognition for extraordinary nurses who exemplify compassion toward patients and families.

Eben Rosenthal, MD, professor and chair of Otolaryngology-Head and Neck Surgery, holder of the Barry and Amy Baker Chair in Laryngeal, Head and Neck Research, and primary investigator of Vanderbilt-Ingram's Barry and Amy Baker Research Laboratory, has been elected to membership in the National Academy of Medicine (NAM), a preeminent advisory body on critical matters of health care, medicine and public health. The NAM noted his "many 'firsts'" in clinical trials using novel imaging agents and methods to further define surgical imaging in head and neck and other cancers. Among them: optical imaging techniques to improve cancer detection during surgery and molecular imaging of tumors with fluorescently labeled therapeutic antibodies.

Ashley Colburn, BSN, RN, works at Vanderbilt-Ingram Cancer Center Belle Meade and is a Vanderbilt Health DAISY Award winner. A patient's family member nominated her because of her compassionate care and warm welcomes. "Ashley greeted us with a smile that warms the heart. She comes right in asking what we'd like to drink, does he want a warm blanket and even adjusts his pillow, all before the infusion even gets started. Within five minutes, in walks Ashley with meds in hand, hooks up his meds, and we are off," the family member wrote. The DAISY Award is a recognition for extraordinary nurses who exemplify compassion toward patients and families.

HIDDEN SIGNALS

CIRCULATING TUMOR DNA HOLDS HOPE FOR PERSONALIZING BREAST CANCER CARE

STORY BY **LEIGH MACMILLAN** • PHOTOGRAPH BY **SUSAN URMY**

LAURA NASCA was in the homestretch of her planned treatment for breast cancer last year when her oncologist offered something new: a blood test to look for circulating tumor DNA — tiny fragments of genetic material that could reveal the presence of lurking cancer cells.

The results surprised Nasca and her doctor, Ben Ho Park, MD, the Benjamin F. Byrd Jr. Professor of Oncology and director of Vanderbilt-Ingram Cancer Center.

At the time of her diagnosis, Nasca had two distinct breast cancers: HER2-positive and HER2-negative (HER2 is a protein that helps control cell growth). She had completed therapy for the HER2-positive tumor and was continuing treatment for the HER2-negative cancer when the blood tests were ordered (two tests were performed; one for each tumor).

Not only did the tests detect circulating tumor DNA (ctDNA), but they showed that it was from cancer cells that were HER2-positive. Park changed Nasca's treatment, and after six months, ctDNA was not detectable in her blood.

"We caught it early, and we were able to change the drugs and get me on what I needed," said Nasca, who lives in Franklin, Tennessee. "This saved my life. If I had not had that test and just continued treatment for HER2-negative cancer, the HER2-positive cancer would have probably gone to my brain — and fast. We caught it at a very, very low level, before it was able to attack other organs."

This is one of the hoped-for ways that ctDNA testing might change cancer care, Park said. Instead of waiting for clinical signs that early-stage cancer has recurred after initial treatment (and if found to be metastatic, it would no longer be curable), it might be possible to detect — and treat — remaining stray cells, with the opportunity to still cure these patients. And the absence of ctDNA could signal that no further treatment is needed, sparing patients from toxic side effects and giving them peace of mind.

"It's still early; there are a lot of caveats, and the studies will take time," said Park, a pioneer in the field of ctDNA testing. "I think we're going to get there — to routinely using ctDNA testing to treat each patient as an individual rather than based on population studies — and that's going to be a big paradigm shift."

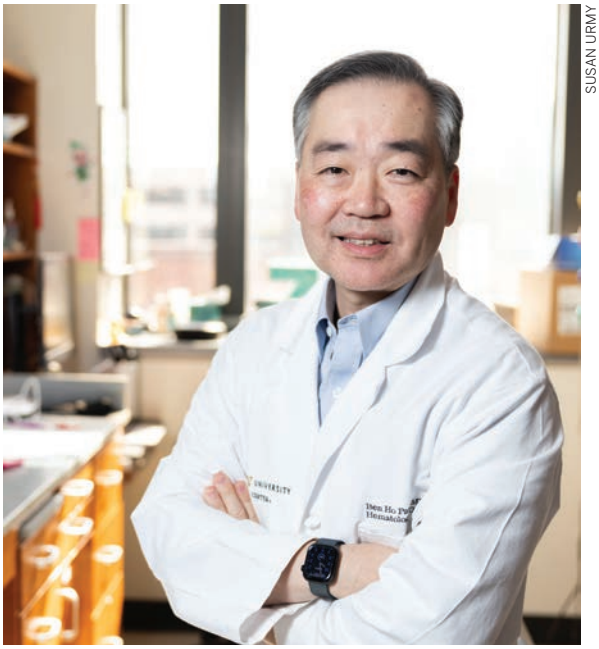
Liquid biopsies

All cells — both normal and cancerous — shed bits of "naked" DNA into the circulation, through active processes and when cells die. Scientists have known for decades that cell-free DNA is present in the blood, but technologies to detect it and to distinguish whether it comes from normal cells or cancer cells have only been available for about 15 years, Park said. These technologies detect tumor-specific characteristics, such as genetic mutations or DNA modifications.

Cell-free DNA testing is now used in prenatal screening for genetic anomalies, transplant monitoring for organ rejection, and as part of "liquid biopsies" to identify genetic mutations in ctDNA and help guide targeted therapies for cancers. Liquid biopsies offer a more complete picture of a cancer, since they detect ctDNA released from the entire tumor and sites of metastases, while traditional tissue biopsies sample limited areas and can miss tumor heterogeneity.

Liquid biopsies can also be used for real-time monitoring of treatment response and early detection of resistance, particularly in patients being treated for metastatic disease.

"Mutations can change over time," said Vandana Abramson, MD, MS, the Donna S. Hall Professor of Breast Cancer and co-leader of the Breast Cancer Research Program at Vanderbilt-Ingram. "A patient with metastatic breast cancer being treated with an aromatase inhibitor might develop a new mutation in the ESR1 gene after two to three years on treatment. That mutation can lead to resistance to the aromatase inhibitor, making it less effective. We have drugs that target



SUSAN URMY

Ben Ho Park, MD, the Benjamin F. Byrd Jr. Professor of Oncology and director of Vanderbilt-Ingram Cancer Center.

Circulating tumor DNA may hold earlier answers about treatment response

Patients who have metastatic triple-negative breast cancer, an aggressive cancer that lacks hormone receptors and HER2 protein, are usually treated with chemotherapy, and sometimes immunotherapy. After two months or more of treatment, they have imaging studies to evaluate whether the treatment is working.

Investigators at Vanderbilt-Ingram Cancer Center and elsewhere are evaluating whether they can use circulating tumor DNA (ctDNA), small bits of DNA released into the blood by tumor cells, to know sooner if treatment is working.

Vandana Abramson, MD, MS, the Donna S. Hall Professor of Breast Cancer and co-leader of the Breast Cancer Research Program at Vanderbilt-Ingram, is leading a study that will test ctDNA after 14 days of standard treatment for patients with metastatic triple-negative breast cancer. Half of the patients in the study will have ctDNA evaluated and if levels do not drop by at least 50%, their treatment will be changed.

"We hope we can detect very quickly whether a patient is responding to treatment and potentially save patients from toxicity and improve outcomes by switching to a more effective treatment earlier if the first treatment isn't working," Abramson said. "I hope that ctDNA testing might replace most cancer imaging as a way to assess response to treatment."

Abramson and other breast cancer researchers at Vanderbilt-Ingram have benefited from donor support, including that of Nicole Kidman, an internationally acclaimed actress and passionate advocate for breast cancer research and care. Kidman, who is a close friend of Abramson, helped as a teenager to care for her mother, a breast cancer survivor.

In addition to her philanthropic support, Kidman gave freely of her time and influence to raise awareness for research during Breast Cancer Awareness Month in October 2025. She has also voiced Vanderbilt Health's new brand campaign, "Details Matter."

"I am so grateful to Nicole for her support and advocacy," Abramson said. "Nicole is someone who has always been interested in science and has a personal connection to breast cancer through her mother's experience. It is so important and valuable that she has both personally supported breast cancer research and care and that she is helping get the message out into the community about the importance of this support."

ESR1-mutated cancers that could be a better option for those patients.

"More studies are needed, but evaluating circulating tumor DNA gives us a way to follow patients longitudinally and look for new targetable mutations."

As liquid biopsies to detect mutations became more common and technologies with increased sensitivity emerged, Park found himself wondering whether ctDNA could be used as a quantitative measure (is it present and at what levels) in patients with early-stage breast cancer.

"I had this light bulb moment 15 years ago," Park said. "Do you have ctDNA after curative-intent therapy for breast cancer or not, meaning: Are you cured, or are you not cured?"

Cancer treatment conundrum

Breast cancer is the most common cancer diagnosis and the second leading cause of cancer death in women in the United States, according to the National Cancer Institute.

About 2 in 3 breast cancers are diagnosed at a localized stage, before the cancer has spread outside the breast, and 25% are diagnosed at a regional stage, where the cancer has spread to nearby lymph nodes but is not considered metastatic.

"There are many patients with early-stage, non-metastatic breast cancer who are curable, and based on large population studies, we put them through the wringer, because we want to cure everyone," Park said.

After surgical removal of a breast tumor, about 30% of patients with nonmetastatic disease are at risk of recurrence.

"So, 70% of the patients who are already cured are getting chemotherapy, endocrine therapy and other treatments for no reason — other than the fact that we don't know who those patients are," Park said.

"That's where the conundrum has come in for breast cancer and now other cancers too; we're almost a victim of our own success because we keep adding more therapies that cure another small percentage of patients, and those therapies get added to the standard of care."

Imagine, Park said, having a test that could determine which patients are already cured after breast cancer surgery or other initial treatments.

"The peace of mind that could give a patient by itself is priceless," he said. "And think about the clinical trial designs of the future: We wouldn't have to enroll everyone; we could enroll only the small group of patients who still have cancer cells in their bodies.

"I liken ctDNA testing to a microscopic CT scan. It's a diagnostic tool, but unlike a CT scan, which can only pick up macroscopic disease, this tool can pick up microscopic disease and tell us whether a patient has cancer still, or not."

Game-changing blood test

In 2015, Park and other investigators in the national Translational Breast Cancer Research Consortium

Can circulating tumor DNA be used to screen for cancer?

Not yet, according to Ben Ho Park, MD, the Benjamin F. Byrd Jr. Professor of Oncology and director of Vanderbilt-Ingram Cancer Center.

Tests that are "tumor-uninformed" — they don't require a primary tumor — are being developed as cancer screening tests. But the tests aren't sensitive and specific enough to reliably detect the small amounts of DNA that would be shed into the blood by early-stage tumors.

"They can work, but still lack diagnostic accuracy," Park said. "Importantly, we do not know whether catching, let's say breast cancer, that much earlier will actually improve outcomes compared to current mammography screening methods. So even if they had 100% sensitivity and specificity, whether that would be clinically meaningful, or simply drive up costs of testing and increase patient — and provider — anxiety, is still uncertain.

"There's still a lot of work to be done in that area."

launched a clinical study to evaluate ctDNA in patients being treated for nonmetastatic stages 2 or 3 HER2-positive or triple-negative breast cancer (which lacks hormone receptors and HER2). Patients with these types and stages of breast cancer typically receive preoperative (neoadjuvant) therapy. If they have no detectable disease at the time of surgery, they are considered to have had a "pathologic complete response."

The study enrolled 228 patients at 24 sites between 2016 and 2018. Investigators reported the first results at the American Society of Clinical Oncology 2025 annual meeting.

The study's primary objective was to determine if ctDNA levels after neoadjuvant therapy predicted a pathologic complete response. All patients with pathologic complete response had negative ctDNA, but there was also an unacceptably high false negative rate, Park said. There were 40 patients who were ctDNA-negative after neoadjuvant therapy who still had disease in the breasts. But unexpectedly, over time these patients had the same positive outcomes as patients who were ctDNA-negative and had a pathologic complete response.

"Right now, when patients don't have a pathologic complete response, it's upsetting; they think they're not going to be cured even though we know many will be," Park said. "Our study says it's not about the pathologic complete response; it's about ctDNA being cleared."

Patients who were ctDNA-positive after neoadjuvant therapy were more likely to have disease recurrence, but not if they became ctDNA-negative following surgery (and potentially additional therapies), Park said.

"After surgery, if your ctDNA is negative, 98% and 94% had no recurrence at three and five years, whereas everyone who was ctDNA-positive recurred within three years. This is as close as we can get to saying we have a blood test to determine if you're cured or not. It's game changing.

"My ultimate hope is that these kinds of findings will change the standard of care for all areas of oncology to a modular approach where we monitor in real time if a therapy has cured a patient. If it has, the patient wouldn't need anything else, and if it hasn't, we would move on to the next treatment."

Helping patients now

Studies to evaluate the clinical utility of ctDNA testing are ongoing.

"What's super exciting right now is that this is available," said Park, who is involved in designing new studies and writing guidelines for testing. "We're one of the few centers that can offer it, and I feel we have really helped our patients."

The ctDNA testing that Park offers to patients like Laura Nasca is called "tumor-informed" testing. Clinicians send a sample of the primary tumor along with blood to the testing company, which determines the genetic mutations in the primary tumor and builds a personalized ctDNA screening test. Whereas early ctDNA tests evaluated only 16 genetic mutations, current testing technologies assess between 200 and 1,800, dramatically increasing the sensitivity of the test for finding very small levels of ctDNA.

Nasca was diagnosed with localized breast cancer

DANIEL DUBOIS

Vandana Abramson, MD, MS, the Donna S. Hall Professor of Breast Cancer and co-leader of the Breast Cancer Research Program at Vanderbilt-Ingram.

Laura Nasca with her two daughters (from left), Ellie Rose, 7, and Teresa, 10.

SUSAN URMY

in 2021 when she was 47. After the birth of her second daughter in 2018, clinicians had advised her not to have a mammogram while breastfeeding and suggested that ultrasound wouldn't be valuable, she said. Before she had another mammogram, her gynecologist felt a lump.

Nasca, who now serves as a research advocate for Vanderbilt-Ingram, said she encourages women to "go ahead and have the ultrasound if you can't have a mammogram."

To treat her two distinct breast cancers (HER2-positive and HER2-negative), she had neoadjuvant chemotherapy, HER2-targeted therapy, and a mastectomy. Lymph nodes removed during the surgery contained HER2-negative cells, so her treatment for HER2-negative cancer continued.

Park offered her ctDNA testing because he believed in the data and had plans in place for whatever they found.

"Laura is a young woman with young children (her daughters are 7 and 10). Her ctDNA was three parts per million, which is very low, but real, and if left untreated would come back."

Nasca had imaging studies to rule out metastatic disease before changing treatments to address the detected ctDNA.

"We don't have proof yet that acting on positive results is going to lead to better outcomes; I think it will, but we're still designing those trials," Park said. "We're living in a gray zone right now, and I have serious discussions with patients before I order this testing.

"My critics say, 'You've opened a Pandora's box, Ben.' And it may be true, but I like to remind them that at the bottom of Pandora's box was Hope. We've got to take some risks to move the field forward, and I don't want to wait another 10 years to help patients I feel like I can help today." ■

HOLISTIC CARE

Integrative oncology expands patient services

STORY BY **TOM WILEMON** • ILLUSTRATION BY **ADOBE STOCK/DIANA DUREN**

Patient care goes beyond chemotherapy and other traditional medical treatments in the Integrative Oncology program at Vanderbilt-Ingram Cancer Center. The program offers patients access to acupuncture, nutrition counseling, exercise coaching, mindfulness sessions, and other options to help them manage pain and maintain mental and physical wellness.

"Integrative oncology provides symptom management for our patients who are undergoing cancer care or after their cancer treatment if they're having long-standing side effects or symptoms from their treatment," said Sarah Murawski, PA, who specializes in integrative oncology and practices acupuncture. "That includes difficulty sleeping and stress and nutrition. A lot of our patients really struggle with weight loss. There is also a pain management component. Integrative treatment is more of a whole person care model, focusing on ways to help patients with their symptoms and side effects to give them a good quality of life during and after cancer treatment."

The Integrative Oncology program was developed in cooperation with Vanderbilt-Ingram's Supportive and Palliative Oncology Clinic, which supports and enhances a patient's quality of life at any point in their treatment course. Palliative care is often confused with hospice, but its clinicians are not limited to end-of-life care. They offer effective options for treating cancer-related symptoms and guidance for future medical planning.

Heather Jackson, PhD, APRN, FNP-BC, administrative director of Advanced Practice at Vanderbilt-Ingram and associate professor of Clinical Nursing and Medicine, gave an example of a referral.

"I had a patient who was really having a tough time with nausea and did not want to take any more pills, so Sarah prescribed aromatherapy. It was peppermint oil, and the patient was given a necklace so that she could have the peppermint oil easily accessible."

Patients are often inquisitive about alternative therapies for cancer treatment side effects, but internet searches can lead them down rabbit holes.

"If you do Google searches about what to do with cancer treatment, there are 1,000 things out there, and integrative or complementary medicine has really been popular in recent years, but there's every piece of advice under the sun online," Murawski said. "When patients come to me, I can give them the science and the research behind these treatments. I narrow down all those options."

After consultations with her, patients feel more empowered, she said.

"A lot of times when patients have a cancer diagnosis, they feel like they are being told what they have to do, but there are all these other actions they can take to support their health that they can choose," Murawski said. "We give them the research and these options, so they can pick and choose what works best for them and their lifestyles."

The Integrative Oncology program was launched in 2024, about a year after Vanderbilt-Ingram's Supportive and Palliative Oncology Clinic was formed.

"What has been great about this service line is a better connection with the cancer center in a way that we didn't have previously," said gastrointestinal oncologist and palliative care physician Rajiv Agarwal, MD, associate professor of Medicine and co-medical director of the Supportive and Palliative Oncology Clinic.

Through the program, Vanderbilt-Ingram offers acupuncture to cancer patients for pain management. Patients receive auricular acupuncture, which involves placing needles in the ear. Since the ear is connected to the autonomic nervous system, vagus nerve and spinal nerves, the stimulation sends signals to the brain that modulate pain processing and reduce inflammation. If patients require more intensive acupuncture, the clinic refers them to the Osher Center for Integrative Health at Vanderbilt.

The Integrative Oncology program partners with the Osher Center, which offers a menu of patient services, including yoga classes, tai chi and qigong classes, massage therapy, sessions on living with chronic pain, mindfulness-based cognitive therapy, and other integrative treatments.

"We're offering patients easier access to Osher," said Sara Martin, MD, associate professor of Medicine, medical director of Vanderbilt Health Outpatient Palliative Care and co-medical director of the Supportive and Palliative Oncology Clinic. Integrative Oncology program clinicians make direct referrals to the Osher Center without patients having to go through additional consultations. Patients can receive the care they need on their first visit to the Osher Center.

However, patients come to Vanderbilt-Ingram from throughout Tennessee and other states, so the Osher Center is not a viable option for them.

"I can do vetting to help patients find, for example, a good acupuncturist who is licensed and has gone through the required education," Murawski said. "I have been able to connect patients with local resources and local nonprofits that offer services for people when money is an issue. I know finances can be tough. For people who cannot access Osher, whether it is because of distance, money or transportation, we have been able to leverage local resources and get patients referrals and access to those."

Vanderbilt-Ingram's Supportive and Palliative Oncology Clinic has locations at the Main Campus, One Hundred Oaks, Belle Meade, Cool Springs and Lebanon. Patients interested in the services provided should ask their treating clinicians about a referral.

"Vanderbilt-Ingram is a comprehensive cancer center, and that's what we're aiming to provide," Martin said. "We're bridging integrative care with more traditional therapies to give our patients the best care possible so that they have the best quality of life possible." ■

Dani Lorson, a three-time leukemia survivor, and her husband, Sean, are expecting their first child.

Fertility Preservation

Three-time leukemia survivor is expecting child

STORY BY **DANNY BONVISSUTO** • PHOTOGRAPH BY **ERIN O. SMITH**

As a 25-year-old lead dancer on tour with "Sesame Street Live," Dani Lorson noticed it took her longer than the others to recover after a show. She thought she might have adult asthma. "It would be two or three hours later; I'd just be sitting on my bed and still had the hardest time catching my breath," she said.

For the majority of the 2015 tour, the dance company moved from city to city after two or three nights. When it stopped in Detroit for a month, Lorson went to a walk-in clinic for tests. When the doctor called and asked her to return to discuss the results, she wasn't concerned.

"The doctor said, 'I think you have leukemia,'" Lorson said. "And I was like, 'What? I'm so healthy. What are you talking about?'"

The doctor said she was 90% sure and that a bone marrow test would be more definitive.

"I studied dance in college — being a professional dancer was my dream. I was not going to leave the tour until I was 100% sure I had leukemia," Lorson said. "When it was confirmed that I had acute lymphoblastic leukemia (ALL), I quit my dream job, and the next thing I knew, I was on a flight back to Mobile, Alabama, and moving back in with my mom. It was quite a regression."

Lorson was scared and didn't know what to expect. She was given the option to freeze her eggs before she started chemotherapy, but it meant delaying treatment.

"At that point, I was more worried about saving my own life than thinking about another life, so I declined," she said.

In Alabama, she followed the pediatric protocol of three years of chemotherapy,

saw a hematologist at Vanderbilt Health for a "second set of eyes" and was leukemia-free for two years, during which time she moved to Knoxville, Tennessee.

She relapsed in November 2019 and was referred to Vanderbilt Health for a stem cell transplant. Her treatment started in January 2020, and in addition to dealing with COVID, it involved a few failed attempts at remission. Then it took a while to find a donor match in the National Marrow Donor Program. After the transplant, she had many complications that kept her in the hospital, including veno-occlusive disease, a severe liver condition in which chemotherapy blocks small veins.

"After I recovered from that, I got to go home, pick up my life and try to find a new normal," she said.

One year later, she relapsed again. Lorson's ALL was back for the third time.

Lorson and her medical team, which included Bhagirathbhai Dholaria, MBBS, associate professor of Medicine in the Division of Hematology and Oncology, decided to get creative after having difficulty finding a donor for her first stem cell transplant.

"Cousins usually aren't good matches, but thankfully I had two who were half-matches," she said. "One was a cousin I hadn't spoken to in 10 years, is 15 years older than me and lives in Florida. I had to call and say, 'Hey, you're a match. Would you mind saving my life?'"

Doctors cautioned Lorson that the stem cell transplant would put her into immediate ovarian failure and offered her the opportunity to freeze her eggs.

"At that point I was married and decided to try it," she said. "I called the fertility clinic the next day and the receptionist said, 'Thank goodness you called today because we close down for the holidays — if you'd called even a day later, we wouldn't have been able to squeeze you in.'"

The second stem cell transplant was much easier on Lorson's body, and she didn't have the same complications she had with her first one. She was advised to wait at least two years before considering in vitro fertilization (IVF), a process in which her eggs would be fertilized with sperm in a laboratory setting.

"I waited about two-and-a-half years but wasn't sure if I wanted to go down that road," she said. "What if I relapsed again? It came back two other times — what's to stop it from coming back again?"

Month by month, she became more confident in her remission and asked Dholaria if she could talk to one of his patients who had a stem cell transplant and then tried IVF. Dholaria said he didn't have any.

"I was like, 'Excuse me? What? Vanderbilt is a huge hospital. You have so many patients. Are you telling me you don't have one stem cell patient who has tried IVF?'" Lorson said. "And he said, 'No.' So I said, 'Well then, I guess it has to be me. I'll be the one. So next time a patient asks you this question, you can give them my number straight away.'"

Dholaria calls Lorson a "superstar stem cell transplant survivor" who has overcome seemingly insurmountable odds.

"I first met her when she experienced relapse of her leukemia," he said. "We decided to pursue curative intent stem cell transplantation, which unfortunately failed after a year. Patients with relapsed leukemia after stem cell transplantation rarely respond to traditional chemotherapy. We decided to give her immunotherapy, which she tolerated well and was able to successfully undergo a second transplant using a different donor."

"The Vanderbilt Fertility Clinic is restarting our IVF program. In addition to the services currently available at our Cool Springs location, we will offer a wide range of advanced fertility services, including both oncofertility and elective fertility preservation (eggs, embryos and sperm)."

- Ryan Heitmann, DO, associate professor of Obstetrics and Gynecology and medical director of the Vanderbilt Fertility Clinic

Dholaria added that Vanderbilt Health has a comprehensive, fully outpatient allogeneic transplant program — one of few in the nation.

"Intensive leukemia therapies typically result in premature menopause in most patients. However, fertility preservation techniques have come a long way, offering hope to patients like Dani," he said. "Her story is of hope and perseverance, inspiring all of us to keep pushing boundaries and find better, safer curative therapies for leukemia."

Vanderbilt Health will soon be offering IVF, said Ryan Heitmann, DO, associate professor of Obstetrics and Gynecology and medical director of the Vanderbilt Fertility Clinic.

"The Vanderbilt Fertility Clinic is restarting our IVF program. Currently, a new clinic and IVF laboratory are being constructed at One Hundred Oaks with an anticipated opening in the first half of 2027," he said. "In addition to the services currently available at our Cool Springs location, we will offer a wide range of advanced fertility services, including both oncofertility and elective fertility preservation (eggs, embryos and sperm).

"The fertility clinic is also in the final stages of a partnership agreement that will allow us to start these services prior to the One Hundred Oaks IVF center construction being completed."

Lorson's IVF doctor initially advised surrogacy, but she was determined to try her own body first, despite the odds.

"I knew it was going to be a hard road with my health history," she said. "Thankfully, with a lot of hormones and shots, they were able to trick my body into thinking it was a baby-making machine."

Her first IVF transfer was a success. At press time, Lorson was four-and-a-half years leukemia-free and 23 weeks pregnant. To a greater or lesser degree, she thinks she'll always worry if her leukemia will return, but she's walked through a lot of pain and bad news to live what she calls "a beautiful life."

"It's absolutely crazy to be pregnant, but I had to believe," she said. "One of these days, doctors are going to stop doubting me." ■


Camp
Camp

‘The Best Version of Herself’

Patient’s story details the challenges of early-onset cancer diagnosis

STORY BY **DANNY BONVISSUTO** • ILLUSTRATION BY **DIANA DUREN**

Even before she was diagnosed with endometriosis, Erin Denbo had long dealt with its symptoms. She knew something was wrong and met with many doctors until she found one who listened. In the fall of 2015, she underwent a six-hour surgery to remove it.

Her husband, Scott, remembers the surgeon describing what he found.

“He said there was endometriosis all over the place, and they removed it,” Scott said. “And he said there were white spots that looked like snowflakes.”

Neither Erin nor Scott thought much about the spots. The surgery appeared successful, and Erin was ready to move on with her life.

At the time, she was a busy mom in her late 30s raising two daughters with Scott. They had been together since their early 20s and were building a life in Nashville after meeting in college and spending time together in California.

Like many young adults juggling work, family and daily responsibilities, cancer — and the unique challenges that come with facing a life-threatening illness in the middle of building a life — was the furthest thing from their minds.

A life-changing call

Three weeks after her surgery, Erin’s phone rang.

“She said, ‘Why is the doctor calling me?’” said Scott, who thought it might just be a postsurgery check-in. “She went into another room and when she came back, she said, ‘I have cancer.’”

The white spots the surgeon found weren’t a concern for Scott and Erin, but the surgeon couldn’t shake the feeling that something wasn’t right. He sent tissue samples to multiple pathology labs before getting an answer that made sense. The diagnosis was an extremely rare one: Erin had Stage 4 appendix cancer.

Erin’s doctors referred her to a specialized surgical team at Vanderbilt Health where she began treatment under surgical oncologist Kamran Idrees, MBBS, MSCI, MMHC, Ingram Professor of Cancer Research and division chief of Surgical Oncology and Endocrine Surgery, and Jordan Berlin, MD, Cornelius Abernathy Craig Professor, professor of Medicine and division director of Hematology and Oncology.

The treatment plan involved chemotherapy followed by an extensive operation that included a one-time procedure known as hyperthermic intraperitoneal chemotherapy (HIPEC) for advanced abdominal cancers that combines cytoreductive surgery to remove tumors with a high dose of a heated chemotherapy wash delivered directly to the affected area.

Scott remembers the gravity of that first consultation.

“He told us, ‘This is what it is; this is what you’re dealing with; and this is a really hard surgery,’” Scott said. “It was terrifying.”

The HIPEC is known as the mother of all surgeries for its length and level of difficulty. Erin’s surgery happened two days after she turned 40.

“She joked that she got to have the world’s biggest surgery for her 40th birthday,” Scott said.

Erin underwent several rounds of

chemotherapy before the HIPEC, followed by more chemotherapy and hospital stays. When she completed her final treatment, she and Scott shared a beer before "going home to piece our lives together," he said. For the next three years, life returned to normal.

Rising rates

Erin's diagnosis falls within a category researchers call early-onset cancer — cancers diagnosed in adults younger than 50.

According to Andreana Holowatyj, PhD, MSCI, assistant professor of Medicine in the Division of Hematology and Oncology, cases in younger adults have been rising worldwide.

"When we talk about early-onset cancers, we mean adults between the ages of 18 and 49," Holowatyj explained. "And we are seeing increases across multiple cancer types."

Those include colorectal cancers, breast cancer, stomach cancer, endometrial cancer, multiple myeloma — and even rare cancers like appendix cancer.

Holowatyj's research recently showed that although appendix cancer remains uncommon, rates are rising across generations.

"It's alarming," she said. "These trends extend beyond one type of cancer."

As more young adults face cancer diagnoses, scientists and clinicians are recognizing that their needs differ from those of older patients.

Cancer can affect nearly every aspect of life, but for younger adults the disruption often intersects with pivotal stages of life.

"Younger individuals may be thinking about body image, fertility, exercise, dating, relationships, building a career, raising children and taking care of parents," Holowatyj said. "These are life domains that may be impacted in different ways for someone diagnosed in their 30s compared to someone diagnosed later in life."

Those concerns can arise at different times along the cancer journey.

Body image issues may emerge after surgery. Potential infertility risk is essential to address before treatment begins. Financial pressures may surface during months or years of care.

"We want to make sure the patient's voice is represented and that we understand their needs and perspective wholly," Holowatyj said. "That's an important part of personalized care — for the patient, with the patient."

Cancer treatment can dramatically alter how patients see themselves.

For Erin Denbo, the physical effects were real.

"Erin was a really beautiful woman by anybody's measure," said Scott. "But after surgery and treatment, there were hormonal issues and changes in weight."

The large abdominal scar from her HIPEC surgery, however, didn't seem to bother her much. Instead, Erin focused on rebuilding strength.

She joined Survivor Fitness, a nonprofit program that pairs cancer survivors with volunteer trainers. Her workouts became a source of empowerment, eventually culminating in something unexpected: a Spartan obstacle race completed alongside other survivors.

'Real focus and purpose'

Mental health challenges are also common among young cancer patients. Scott said Erin's experience surprised him.

"I think Erin was her best self when she was going through treatment," he said. "It gave her a real focus and purpose."

Before cancer, Erin struggled with periods of anxiety and depression. During treatment, Scott believes that sense of clarity helped her cope.

"She became the best version of herself," he said.

Faith also played a significant role. "She had a very strong faith," Scott said. "I think that helped her through it."

Support communities helped as well. Erin joined a support group through a local cancer nonprofit, connecting with others who understood what she was facing.

Scott initially resisted joining caregiver support programs himself — something he later regretted.

In the spring of 2019, Erin began experiencing abdominal symptoms again. Idrees confirmed what the Denbos feared: The cancer had returned.

ERIN O. SMITH

"We want to make sure the patient's voice is represented and that we understand their needs and perspectives wholly."

Andreana Holowatyj, PhD, MSCI

Top: Erin Denbo, husband Scott (not seen) and dog, Duke, celebrate her last chemotherapy treatment in 2016, the first time she was diagnosed with Stage 4 appendix cancer.

Below: Erin and Scott Denbo with their daughters at a family birthday celebration.

Another surgery followed, but the prognosis was grim. Scott remembers the difficult conversation with Idrees. "He told us, 'This is bad. It's going to kill you,'" he said.

Erin chose to pursue additional chemotherapy for a time before transitioning to palliative care. Even then, the family focused on making memories. One trip stands out: a vacation to Telluride, Colorado, with friends in early 2020.

The group rented a cabin high in the mountains. Erin was determined to enjoy the trip despite her illness. "We brought IV bags to keep her hydrated," Scott recalled.

The ski resort shut down shortly after they arrived as the COVID-19 pandemic began spreading across the United States, but the trip remained meaningful.

"We never got to go skiing," Scott said. "But we had some really good memories."

Erin died Aug. 10, 2020, after several weeks in home hospice. She was 44.

Today, Scott reflects on Erin's cancer journey not only as a time of fear and loss, but also of resilience.

Despite the devastating diagnosis, Erin found ways to live fully — nurturing friendships, raising her daughters and supporting others facing cancer.

"She handled the whole thing with grace," Scott said.

The caregiver aspect of young adult cancer

When Erin's cancer returned, Scott approached caregiving differently the second time around.

"I was definitely angry at the world," he said of Erin's first experience with cancer treatment. "It disrupted our life, our finances, everything we were trying to build."

As a high-driven professional in sales, balancing work and caregiving proved difficult.

"I probably wasn't the world's best caregiver," said Scott, who sought support through a caregiver group.

"I think coming out on the other side of it, I'm a more empathetic human being," he said. "More patient."

Caregivers often face their own emotional and financial challenges, from navigating complex medical systems to balancing careers and family responsibilities.

Holowatyj notes that the impact extends far beyond the patient.

"Cancer doesn't just affect the individual diagnosed," she said. "It affects families and loved ones as well."

Holowatyj said Erin's story highlights an important message for young adults: Pay attention to any changes in your health. One concerning trend scientists see is younger patients being diagnosed with cancer at later stages.

"Some patients are told their symptoms are something else," she said. "Others delay seeking care."

While the word "cancer" can be frightening, she encourages people not to ignore unusual symptoms.

"If you're experiencing a change that doesn't feel normal for your body, go talk to your health care provider," Holowatyj said. "Detecting something early can be lifesaving."

She also encourages people not to face medical concerns alone.

"If you can, bring someone with you," she said. "Just because you can do it alone doesn't mean you have to." ■

HELP FOR YOUNG ADULTS WITH CANCER

Vanderbilt-Ingram Cancer Center offers a support program for young adults with cancer. To learn more about the program, email Hasani Bland at hasani.l.bland@vumc.org or visit www.vanderbilthealth.com/information/young-adults-cancer

From left: Alexis, Paul, Lizzie and Taylor Kappelman

RARE CANCER

When there's no standard treatment, doctor elevates care

STORY BY **TOM WILEMON** • PHOTOGRAPHY COURTESY **KAPPELMAN FAMILY**

Paul Kappelman and Lizzie Sullivan were born in the same New Orleans hospital, but their paths didn't cross until many years later during a blind date while they were sophomores at Tulane University.

"She was the sweetest girl, super fun, outgoing and bright," he said. "We became friends and enjoyed each other's company. We spent that spring hanging out, and then that summer, we started getting serious and dating."

Their college romance transcended into a life's journey. They continued dating through graduate school and stayed steady when their jobs required a long-distance relationship. He proposed when she had returned home just as the New Orleans Jazz & Heritage Festival was about to begin.

She said yes and became Lizzie Kappelman. It was a union that brought them two daughters, successful careers, and stints in Tucson, Arizona, and Dallas, before the family settled in Nashville. Their 23-year union would have lasted longer had she not been diagnosed with a rare cancer at a young age. Lizzie Kappelman was 48 when she learned she had metaplastic breast cancer. The metaplastic subtype, which accounts for between 0.2% and 5% of breast cancers, is aggressive and difficult to treat.

Most metaplastic breast cancers are triple-negative — as Lizzie's was — meaning that the breast cancer does not express estrogen, progesterone or HER2 receptors. This excludes the use of hormone therapies and HER2-targeted therapies. It is also often resistant to chemotherapy, so a standard of care specific to metaplastic triple-negative breast cancer has yet to be established.

Her cancer was discovered through a mammogram, and a follow-up biopsy determined the type.

"I had heard of triple-negative breast

cancer, but I was unaware of metaplastic breast cancer," Paul Kappelman said. "We learned that the survival rates were not as good as normal triple-negative breast cancer. We knew we were in for a challenge."

The couple researched cancer centers, contemplating treatment at The University of Texas MD Anderson Cancer Center in Houston, where Lizzie had family, before ultimately deciding to go to Vanderbilt-Ingram Cancer Center. A physician cousin from North Carolina had recommended Ben Ho Park, MD, PhD, the Benjamin F. Byrd Jr. Professor of Oncology, professor of Medicine and director of Vanderbilt-Ingram.

"We emailed Ben, and he emailed back within hours," Paul Kappelman said. "He was stating, 'I'd be happy to see you' and 'When can you come in?' I thought, wow, this guy is the head of the program and world-renowned, and he's that responsive."

The couple chose Vanderbilt-Ingram because of its proximity to their home and Park's willingness to involve them more in treatment decisions, he said. She wanted to have surgery before chemotherapy.

"It really came down to a matter of preference given how rare this cancer is, and there wasn't a black-and-white blueprint for treatment," he said. "Ben had the perspective that this wasn't standard triple-negative breast cancer; that it is different; and that we need to be open to as many creative paths as we might seek."

Metaplastic breast cancer was first recognized as a distinct carcinoma subtype by the World Health Organization (WHO) in 2000. It gets its name from the word metaplasia, a medical term for the transformation of one cell type to another. In metaplastic breast cancer, the cells typically are epithelial cells that line the ducts and lobules of the breast, then they morph into mesenchymal cells that can differentiate into other cell types like those found in bone, muscle and cartilage. Because of this cellular heterogeneity, pathologists and oncologists made diagnoses ranging from carcinosarcoma to squamous cell carcinoma before the WHO designation.

In addition, there is little data on how to best treat metaplastic breast cancer, but some studies suggest that due to their relative insensitivity to chemotherapy, doing surgery first to remove the tumor may be a preferred option. Park has treated a number of patients with metaplastic breast cancer in his 20-plus years as a breast oncologist.

"In my opinion and experience, as a group, most metaplastic breast cancers are not very chemo-sensitive. As such, even though studies suggest no real differences in outcomes whether one gets chemotherapy before or after surgery, that applies to patients with "normal" types of breast cancer. Most of those studies did not include any — or only very few — patients with metaplastic breast cancer, and so the data are not really applicable. Therefore, for patients with metaplastic breast cancer, it is usually my preference to do the surgery first to get the tumor out before it has a chance to spread," said Park.

Lizzie Kappelman had been interested in health and medicine prior to her diagnosis. She volunteered with fundraising efforts for Type 1 diabetes research and care as well as for Monroe Carell Jr. Children's Hospital at Vanderbilt. She researched her cancer diligently and engaged with Park in her treatment plan, asking questions and exploring options.

"We would text Dr. Park or email him, and he would call right back," Paul Kappelman said. "I can't tell you the number of phone calls and conversations we had brainstorming. He was open to Lizzie's feedback and ideas, would take them, digest them, and come back to her. We had so many conversations, early in the morning, late at night, at his office, over the phone, over Zoom, just talking about treatment options and plans, listening to his ideas, going back and forth. I appreciate him as a person and as a clinician. He's pretty special."

Her treatment plan was surgery followed by chemotherapy, then multiple rounds of radiation along with immunotherapy. However, during her chemotherapy, the cancer recurred.

"Unfortunately, Lizzie's cancer was completely insensitive to chemotherapy. When it came back, we still tried a lot of different therapies including multiple chemotherapies, radiation and immunotherapy, but the tumor was too aggressive," Park said.

"The nurses at the Belle Meade clinic got to know Lizzie and me and my family on a personal level," Paul Kappelman said. "They became like family. It sounds easy, but when you are dealing with cancer patients, and you end up losing these patients, you know it's hard. We always felt confident that we were getting amazing care, but they were the sweetest people."

Lizzie Kappelman died Nov. 14, 2023, approximately two years after her diagnosis. She excelled at many roles in life. She had worked in procurement for Compaq Inc. and IBM, and had been a steadfast partner to Paul, a loving mother to her daughters, Taylor Anne Kappelman and Alexis Settler Kappelman, and a master gardener, who kept flowers in blossom around their home. Her family created the Lizzie Kappelman Breast Cancer Research and Innovation Fund in her honor, and in gratitude for her care team at Vanderbilt-Ingram.

At their first meeting, on that blind date, she had worn cowboy boots, Paul Kappelman recalled, because they were going line dancing.

"She just got prettier and prettier as she aged," he said. "She just had a healthy, natural kind of beauty with long brown hair and big brown eyes. She was captivating. She made time for people and would be really focused on being present with everyone she encountered." ■

From left: Taylor, Lizzie and Alexis Kappelman

Ronnie James (seated far right), with his son Jeff James (standing far left), and grandsons Jack James (seated) and Hank James (standing).

SCREENING SCRUTINY

Doctor suggests an extra test and discovers tumor in patient with family history of cancer

STORY BY **PAUL GOVERN**
PHOTO BY **MATT HERNANDEZ**

"It was just a fluke," says Ronnie James, recounting how in November 2023 he came to receive a consequential clinical test.

He was in a Vanderbilt Health nephrology clinic, feeling good about his latest kidney function results. "Everything was good; I was doing OK, really." And that's when his nephrologist asked if he'd had an ultrasound lately. "I said, 'No, do I need one?'"

Anna Burgner, MD, associate professor of Medicine, answered, "Well, no — but if you haven't had one, why don't we do it."

As James describes it, within an hour he had completed the ultrasound and started the drive home to Paducah, Kentucky. Then he received a call from Burgner. He had a tumor on his left kidney.

The list of people in James' life who've had cancer begins with his father, who died at age 52 with liver cancer, and two of his three sisters, one who died in 2011 with kidney cancer, and one who's been successfully treated for breast cancer.

He recalls becoming worried and nervous behind the wheel on Interstate 24. "Life in general went through my mind. But I knew if it was going to be taken care of, it would be at Vanderbilt."

The following day, James' confidence was bolstered by a first conversation with surgeon S. Duke Herrell, MD, professor of Urology. When James underwent surgery weeks later, postsurgical pathology confirmed the growth had been cancer.

Some 18 years before, James had accepted an invitation from a friend, Orrin Ingram, to join the Vanderbilt-Ingram Cancer Center Board of Advisors. Ingram was treated successfully for prostate cancer at Vanderbilt-Ingram in 2018 and today remains chair of the board, and James remains among the board's members. Both men and their families are benefactors of Vanderbilt-Ingram and Vanderbilt Health. James and his wife's recent gifts to Vanderbilt stem directly from his experience with kidney cancer.

Paducah sits on the western tip of Kentucky on the south bank of the Ohio River. Upon its founding in the steamboat era, the city became both an inland maritime hub and a railroad hub. Anecdotal evidence has led James to believe that his hometown has a carcinogenic environment. "I think a lot of it has to do with the manufacturing plants in this area. It could be the water; it could be air; it could be both — but it has been an issue," he said.

James was born in 1950 into what he describes as a lower-middle-class household in Paducah, where his father worked as an engineer with a barge company and his mother worked at a hosiery factory. Growing up in a safe city, he paints an idyllic childhood capped by playing baseball in the city leagues. Following high school, he went into business as a residential builder, attending a local community college at night. In 1970 he married Paula Walker, also from Paducah. And in 1986 at age 36, having worked for 14 years in Paducah's bustling maritime industry, he founded James Marine Inc.

Starting out with 25 employees, James has built a company that today employs some 1,600 people at locations in Kentucky, Louisiana and Alabama. James Marine tugs barges of grain, fuel and chemicals up and down the Ohio and Mississippi rivers and their tributaries. At its dry dock facilities, the company services and repairs tugboats. They build and refurbish barges. They provide fueling and grocery services to river traffic and docking for vessels awaiting tows. While James remains the chair of the board and still goes into the office daily, his son, Jeff, has taken over management of the company as CEO and President.

Two months after surgery, using a tool James says resembled a caulking gun, Herrell removed a stent that had been implanted to keep James' ureter open during healing.

Early in his recovery, James asked Herrell if he knew what caused his cancer. "He said, 'Ronnie, if I knew that I'd have the Nobel Prize — we just don't know.'"

James over the years has donated time and energy to a long list of civic, religious and maritime industrial organizations. His and his wife's recent gifts to Vanderbilt Health are in honor of Burgner and Herrell. "I felt I was fortunate to be able to do something right out of the gate," James said. "I asked them how they wanted to put the money to good use."

The two new funds are: the Paula and Ronnie James Family Faculty Development Fund, to provide support for faculty development in the Department of Urology Division of Endourology and Stone Disease, in honor of Herrell; and the Paula and Ronnie James Family Next Generation Fund, to provide fellowship program support in the Department of Medicine Division of Nephrology and Hypertension, in honor of Burgner, with the goal of supporting the Vanderbilt Nephrology Fellowship Training Program.

James, a cancer-prevention booster, urges everyone not to delay recommended screenings. ■

When a scientist gets cancer

A cancer expert's journey through his own diagnosis and care.

STORY BY **LARRY MARNETT**
PHOTOGRAPH BY **SUSAN URMY**

I joined the faculty at Wayne State University in 1975 and built a research program exploring the molecular events that link inflammation and cancer. My two main interests were then and are still DNA damage and mutations triggered by reactive oxygen species and the involvement of prostaglandins in cancer development. I was recruited to Vanderbilt University in 1989 as the Mary Geddes Stahlman Professor of Cancer Research and found myself in research heaven because of the world-class research environment.

A few years after the move, Hal Moses asked me to help him build what became Vanderbilt-Ingram Cancer Center by serving as the associate director for Research. Along with Hal and David Johnson, we began the hard but very rewarding work of putting in place a cancer center where none had existed. There were plenty of talented faculty and important pieces already in place, such as the A.B. Hancock Jr. Memorial Laboratory for Cancer Research and the Henry-Joyce Cancer Clinic. Everyone pitched in, and within less than two years, we had secured our status as a National Cancer Institute-Designated Cancer Center.

One of the activities I really enjoyed was interacting with individuals interested in making gifts to support cancer research. Philanthropy is essential to building initiatives in an academic medical center, and it was particularly critical as we built Vanderbilt-Ingram. I especially remember a breakfast meeting at Ingram Industries when I closed my remarks by saying, "I am investing my time to build a world-class cancer center so when I get my cancer, I'll have a great place to be treated." I based this remark on the statistics that 1 in 2 men and 1 in 3 women will develop cancer in their lifetimes. So there was a good chance I was going to get cancer at some point, but until last year, I only developed skin cancers that were easily removed.

The link between chronic inflammation and cancer has strengthened with time, and our laboratory efforts have provided important insights that led to the use of COX-2 inhibitors for prevention of colon cancer and to a more recent project to develop new drugs for metastatic castrate-resistant prostate cancer. Vanderbilt has been the perfect home for my research program, and I have been blessed with

many talented and dedicated PhD students, postdoctoral fellows and research technicians. In fact, last October I celebrated my 50th year as a faculty member with a reunion that drew some 75 former trainees from five continents.

As I got older, I started having trouble urinating — I was going more often, but the stream was weak. This is a fairly common consequence of aging and usually results from an enlarged prostate. My prostate-specific antigen (PSA) levels were low (~ 2.5), so there was no concern about prostate cancer, but the urinary problems were disrupting my sleep and daytime activities. Dr. Richard Hock, my primary care physician, referred me to Dr. Nicole Miller to consider HoLEP laser surgery to reduce the size of my prostate. Cystoscopy revealed that my prostate was small, but it had grown vertically and was making a plug in the bottom of my bladder. Dr. Miller performed the surgery in the summer of 2023, and it was an unqualified success. I wished I had done it years earlier.

The biopsy of the excised prostate tissue revealed some low-grade cancer (Gleason score 6) in about 5% of the tissue, but the consensus was that a Gleason 6 at my age (76) was something I would die "with not of." So I looked forward to a healthy future with occasional PSA tests to monitor any potential prostate cancer. Eight months after the surgery, my PSA was 3.0, which is still low, but Dr. Miller suggested I get an MRI to see what my prostate looked like if we were going to continue using PSA as an indicator of prostate cancer. The MRI showed two lesions on the outside of my prostate, not in the region that the laser surgery had removed. I wasn't too surprised because I knew there was some low-grade cancer in there, but I also knew I'd have to get a needle biopsy to see what kind of cancer was in those lesions.

Dr. Kristen Scarpato did the biopsies and called me two days later with the results. Nearly half of the 25 biopsies showed cancer, and there was a mix of Gleason 6 as well as Gleason 7, and one biopsy had a Gleason 8 (3 + 5). My life changed irreversibly during that phone call — I had advanced prostate cancer. Had it spread? I had to get a PET scan that uses a radioactive antibody to find any prostate-specific membrane antigen (PSMA) outside my prostate. My anxiety level was through the roof because the prognosis for men with metastatic prostate cancer at the time of diagnosis is much worse than if the cancer is localized to the prostate.

The PET scan was very simple. I was injected with the radioisotope then moved back and forth in the scanner for 15 minutes. Afterward, the technician said, "Good luck with the results of your scan." Had he seen something? Did I light up the entire field? I was so keyed up that irrational thoughts were filling my brain. I eventually decided that he was just being nice. In fact, the PET scan revealed the cancer was localized to my prostate.

Despite this good fortune, the cancer had to be treated. After long talks with Dr. Sam Chang and Dr. Eric Shinohara, I decided that radiation therapy would be best for me. There would be a series of 26 radiation treatments over a period of five weeks. The response to radiation is hard to predict, so I prepared for the worst — fatigue, problems urinating, bowel problems. In fact, I experienced very mild symptoms of bladder urgency and some constipation. I never felt tired and worked throughout the treatments.

It's a four-minute walk from my lab to the radiation oncology suite, so I walked down, got treated, then walked back and continued working. Easy-peasy. Well, not really. The X-ray sources are highly precise and coupled to a CT scanner. This enables the technicians to simultaneously perform low-grade irradiation of the pelvis, more intense irradiation of the prostate and yet more intense irradiation of the region of the prostate with the most cancer — talk about personalized medicine! But to achieve that level of precision without damage to surrounding tissues, preparation for the sessions was exacting and more challenging than I anticipated. For five weeks, my mornings were entirely devoted to it. When I finally completed my last treatment Aug. 14, 2025, I rang the bell and walked back to my office with misty eyes and a big smile on my face.

The other component of my cancer treatment is medication to drive down my testosterone levels ("hormone therapy"). I'm taking a pill every day and will have to continue for 18 months. It's not my favorite thing, but my side effects are manageable — hot flashes, excessive sweating and a bit lower energy level. I'm exercising and walking regularly so I'm able to work, play golf and enjoy life. My PSA and testosterone levels are undetectable, so all the therapy seems to be working.

I suppose it is ironic that I developed prostate cancer while working on drugs to treat prostate cancer, but it's not unusual. Being a scientist or a physician is not an insurance policy against getting the disease. What WAS unusual was the fact that my PSA was never close to a level of concern despite the fact I had advanced disease growing in my prostate — every prostate cancer is different.

As a cancer researcher, I was able to understand my various diagnoses and treatments, which helped mitigate my anxiety. But the fact is that I was a cancer patient and am now a survivor, just like all the people I've had the privilege to meet at Vanderbilt-Ingram events. I am confident the radiation killed my cancer, but I'll always worry when a technician draws blood for my next PSA.

Many times over the past year, I have thought back to that breakfast at Ingram Industries and my comment about building a great cancer center for my own treatment. It took 30 years to collect the dividend, but I was right about the investment. Like all patients at Vanderbilt-Ingram, I received exceptional care for my cancer. ■

Larry Marnett, PhD, earlier in his career, in the A.B. Hancock Jr. Memorial Laboratory for Cancer Research.

ESKIND BIOMEDICAL LIBRARY ARCHIVES

CLIP IN 20 26 4 THE CURE

4 HOURS. 400 RIDERS. PEDALING FOR A PURPOSE.

Join us for the 5th Annual **Clip In 4 the Cure**, benefiting Vanderbilt-Ingram Cancer Center

GEODIS PARK | OCTOBER 3, 2026

Register now at **ClipIn4theCure.org**

Momentum

VANDERBILT UNIVERSITY MEDICAL CENTER
VANDERBILT-INGRAM CANCER CENTER

Office of News and Communications
T-5200 Medical Center North
Nashville, TN 37232-2390

VANDERBILT UNIVERSITY
MEDICAL CENTER