

WINTHROP P. ROCKEFELLER
CANCER INSTITUTE
MAGAZINE



University of Arkansas
for Medical Sciences

2025-26

UAMS
Winthrop P. Rockefeller
Cancer Institute



Dear Colleagues and Friends,

It is my honor to share with you our fourth annual Winthrop P. Rockefeller Cancer Institute Magazine. In this edition, we highlight our scientific achievements, novel cancer treatments, community outreach and patient stories. Likewise, you will meet the clinicians, researchers and staff working in support of our mission to expand access to cancer care and decrease the cancer burden in Arkansas.

Our clinicians and researchers continue to push the boundaries in cancer research, treatment and prevention, and we are committed to addressing all cancers that directly impact Arkansans. Cancer Institute members are making great strides in fields such as molecular biology, immunotherapy and prevention. You will also read about clinical trials and how our investigators are actively working to facilitate new and better treatment options for patients across Arkansas by offering cutting-edge therapies to treat patients with multiple myeloma, prostate, lung, breast and colorectal cancer.

As we launch our lung cancer mobile screening program, we now operate the largest mobile screening fleet in the nation, combining and complementing our mobile mammography program that reaches thousands of women throughout Arkansas. These mobile units provide more than just screenings. They represent hope arriving at church parking lots, community centers and workplaces across our state. Community outreach and engagement remains central to our mission and continues to inform our work so that we are able to meet the top cancer needs of Arkansans, ensuring their voices are heard and the barriers they face in getting the care they need are overcome.

The past year's fundraising activities demonstrate the depth of our community's support, with proceeds going to fund cancer research in Arkansas as well as other efforts within the Cancer Institute. Two key fundraising events, the Be a Part of the Cure Walk and Gala for Life, broke participation and fundraising records this past year. In 2025, the Gala for Life raised a record \$2.8 million.

Thank you for your continued support of the Winthrop P. Rockefeller Cancer Institute. As we pursue NCI Designation, we remain focused on conducting innovative research and ensuring that every Arkansan receives exceptional care.

Sincerely, 

MICHAEL J. BIRRER, M.D., PH.D.

Vice Chancellor, University of Arkansas for Medical Sciences

Director, Winthrop P. Rockefeller Cancer Institute

Executive Director, Cancer Service Line

Kent C. Westbrook, M.D., Director's Endowed Chair, Winthrop P. Rockefeller Cancer Institute

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SETTING THE STANDARD

Nationally Recognized Team Leads Arkansas Breast Care

BY DEANN ELDREDGE HUBBERD



THE BREAST CANCER PROGRAM at the **University of Arkansas for Medical Sciences (UAMS) Winthrop P. Rockefeller Cancer Institute** offers a unique team-based approach to patient care.

The Breast Cancer Program's team is a multidisciplinary group of board-certified and often fellowship-trained academic physicians, including surgeons, radiologists, surgical oncologists, plastic surgeons, geneticists and pathologists. Other team members include genetic counselors, registered nurses and advanced practice registered nurses, behavioral medicine specialists and social workers. This multidisciplinary team specializes in diagnosing and fighting breast cancer, enabling them to offer highly personalized and advanced breast care treatments and technologies.

“The Breast Cancer Program's clinicians are academic clinicians. Not only do they read the most recent medical information, they also write it, and that's not easy to come by,” said **Michael Birrer, M.D., Ph.D.**, director of the Winthrop P. Rockefeller Cancer Institute.

The Breast Cancer Program is Central Arkansas's only breast team accredited by the National Accreditation Program for Breast Centers (NAPBC), and it is one of only two NAPBC-accredited programs in Arkansas and the only one with four national accreditations.

“Being recognized again by the NAPBC distinguishes the UAMS Breast Cancer Program as one of the leading breast cancer treatment programs in the United States,” said **Ronda S. Henry-Tillman, M.D.**, professor and executive vice-chair of the Department of Surgery at UAMS and holder of the Muriel Balsam Kohn Chair in Breast Surgical Oncology at UAMS.

After detection, the expert breast care team reviews each patient's case and creates a personalized treatment plan. Even after treatment begins, the Breast Cancer Program team continues to discuss and monitor each patient, resulting in individualized and comprehensive breast cancer care.

But even a team this extensive is not complete without the patient and their primary care provider, both of whom play a key role. Primary care physicians receive a phone call and a letter outlining how they can remain involved in their patient's care. They can participate by video, phone or in person when their patient's case is presented at the weekly Multidisciplinary Breast Cancer Case Conference to discuss patient progress. Staff are also available for the patient to discuss second opinions or recommendations from their primary care provider.

The hub of the Breast Cancer Program is the Breast Center, which is in a spacious new facility on the third floor of the Winthrop P. Rockefeller Cancer Institute. The center advances how breast cancer is detected, diagnosed and managed by combining highly coordinated, patient-centered care with state-of-the-art imaging technology.

One of the most significant additions to the Breast Center's imaging capabilities is contrast-enhanced spectral mammography, an advanced form of mammography designed to improve cancer detection in patients with dense breast tissue. Unlike traditional or even 3D mammography that focus primarily on anatomy, this technology allows radiologists to evaluate breast physiology by using contrast material to highlight areas of abnormal activity. This approach improves visibility when dense tissue may otherwise obscure concerning findings.

Contrast-enhanced spectral mammography also serves as an important alternative for patients who cannot undergo breast MRI. Some patients are unable to lie comfortably on their stomach for extended periods, experience claustrophobia or have implantable devices that are not MRI-compatible. Because this exam is performed while standing and uses a familiar mammography setup, it expands access to advanced imaging for a broader group of patients.

Beyond technology, the Breast Center is defined by its commitment to seamless, coordinated care. Every patient undergoes a personalized breast-cancer risk assessment based on their medical and family history, allowing the care team to stratify risk and tailor follow-up accordingly. Patients are offered same-day results, an approach that helps reduce anxiety and eliminates unnecessary waiting.

"If the patient is here for a screening exam, they're given the option to stay for same-day results. All diagnostic patients — those presenting with a specific concern — automatically stay for their results. Images are reviewed by the radiologist, and the radiologist speaks directly with the patient to give results," said **Gwendolyn Bryant-Smith, M.D.**, director of the Breast Center.

The Breast Center is staffed by fellowship-trained breast radiologists who specialize exclusively in breast imaging, supported by a team of highly trained technologists. This focused expertise, combined with modern equipment and an integrated care model, distinguishes the Breast Center as a leader in comprehensive breast health services.

In recognition of the Breast Center's ambitious standards, the American College of Radiology (ACR) awarded the Breast Center the distinction of ACR Comprehensive Breast Center. This prestigious recognition includes a mandatory accreditation in mammography and voluntary accreditations in stereotactic core biopsy, ultrasound, ultrasound-guided biopsy and breast MRI.

The Breast Cancer Program also offers advanced surgical procedures, including dual breast reconstruction at the same time as a mastectomy, nipple-sparing surgery, and procedures to avoid contour defects after lumpectomies. In addition, the surgical team uses ultrasound technology to ensure clean margins are attained during surgery.

Through the Cancer Institute, Breast Cancer Program patients have access to the largest number of clinical trials in the state, providing them access to treatments they might not otherwise have.

Additionally, the Breast Cancer Program contains the Cancer Institute's Mobile Mammography Unit, which includes three MammoVans staffed with a driver and two mammography technicians. This fleet allows Cancer Institute staff to reach every corner of Arkansas each year and improve early detection and prevention of breast cancer, one of the state's leading cancers.

Together, the Cancer Institute's Breast Cancer Program provides expertise in screening, diagnosis and clinical management of breast cancer.

"The Breast Cancer Program's clinicians are academic clinicians. Not only do they read the most recent medical information, they also write it, and that's not easy to come by."

— Michael Birrer, M.D., Ph.D., director of the Cancer Institute

WINTHROP P. ROCKEFELLER

Breast Cancer Team members (l-r) Daniela A. Ochoa, M.D., Gwendolyn Bryant-Smith, M.D., and Ronda S. Henry-Tillman, M.D. Pictured with Cancer Institute Director, Michael Birrer, M.D., Ph.D., and Cancer Institute Associate Director of Administration Amy Jo Jenkins, M.S.



AN UNPRECEDENTED APPROACH

Novel Phase I Trial Offers Promising Treatment Option for Pancreatic Cancer

BY KRISTINA JOHNSON

RESearchers at the UAMS Winthrop P. Rockefeller Cancer Institute are conducting a unique and innovative pancreatic cancer treatment trial.

In Arkansas and across the country, this disease is known to occur with very high mortality rates. According to the NCI-CDC state cancer profile, the 2019-2023 age-adjusted mortality rate for pancreatic cancer in Arkansas was 11.1 per 100,000.

Rangaswamy Govindarajan, M.D., is the principal investigator for the trial, titled “Phase Ib/II Study of Intratumoral MMR Vaccine Injection in Borderline Resectable/Unresectable Pancreatic Cancer (MMR Vaccine Injection Trial).” He is a hematologist-medical oncologist specializing in gastrointestinal (GI) cancers, and he has served as the division director of Hematology-Oncology in the UAMS College of Medicine since 2023. Govindarajan developed an interest in gastroenterology during his early training, and when he entered the field of oncology, he directed that interest towards GI cancers.

This renewed focus led Govindarajan to collaborate with Bolni Marius Nagalo, Ph.D., a former Cancer Institute member now based at the University of Maryland Comprehensive Cancer Center. Over the past two years, Govindarajan and Nagalo — together with **Martin Cannon, Ph.D.**, a cancer immunology expert at UAMS — have worked closely to design the novel clinical trial for pancreatic cancer.

The MMR Vaccine Injection Trial is a first-in-human trial and is testing an innovative approach: injecting an oncolytic virus directly into unresectable pancreatic tumors to help the body’s immune system recognize and attack cancerous cells.

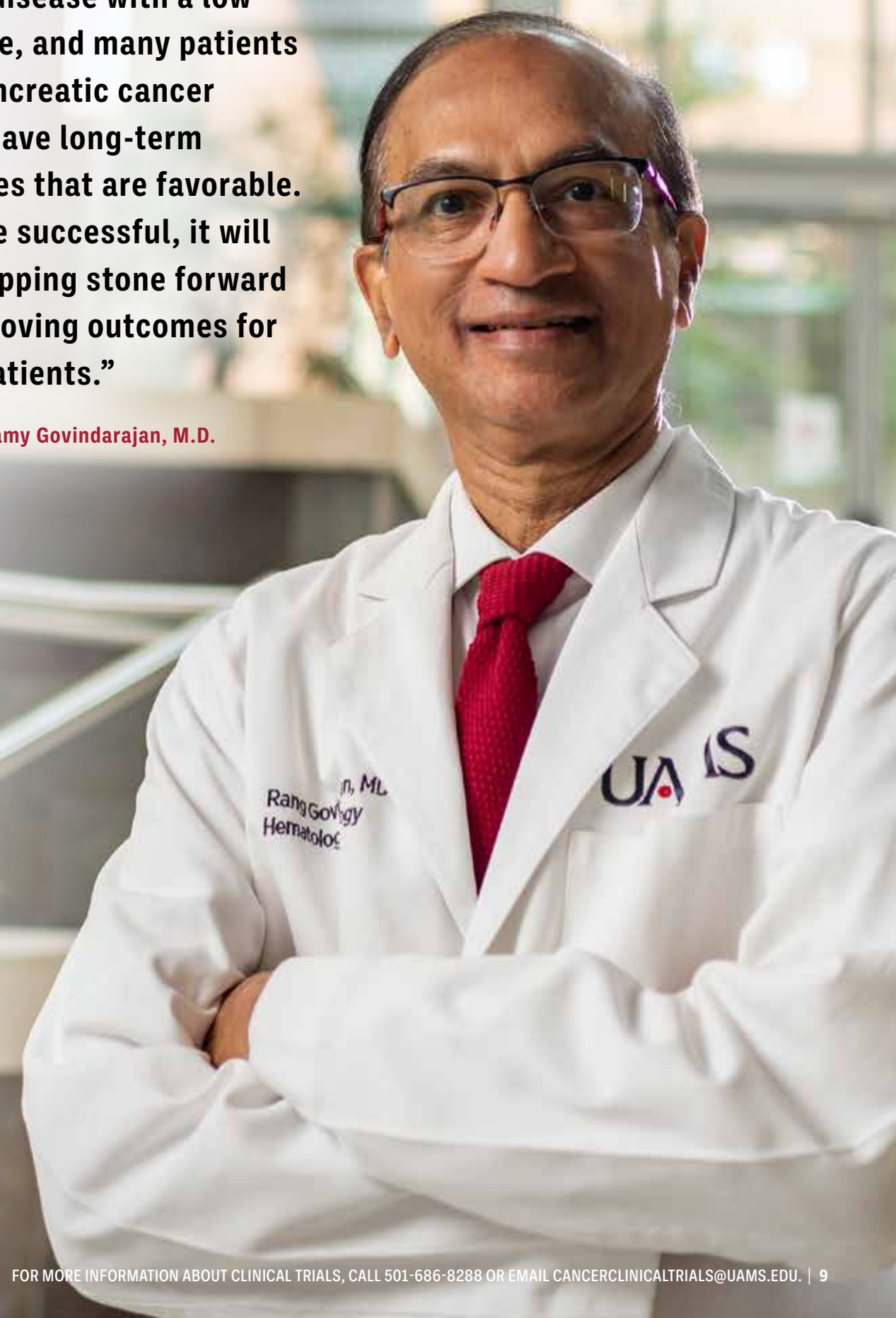
The oncolytic agent being used is the live attenuated MMR (measles, mumps, rubella) vaccine, which has been long used to protect against childhood infections. In this trial, the MMR vaccine is being repurposed and delivered directly into tumors, where it is expected to trigger an immune response that selectively attacks cancer cells. The hope is that this new treatment strategy will shrink tumors, making surgery a newly viable option for patients previously deemed inoperable, and ultimately, prolonging their survival.

Such a study marks a pivotal moment for the field of oncology, representing not only a novel therapy but also a continuing commitment to testing the boundaries of what is possible in pancreatic cancer treatment. When asked about the significance of the MMR Vaccine Injection Trial, Govindarajan stated, “Pancreatic cancer is a deadly disease with a low cure rate, and many patients with pancreatic cancer do not have long-term outcomes that are favorable. If we are successful, it will be a stepping stone forward for improving outcomes for these patients.”

If the MMR Vaccine Injection Trial proves successful, Govindarajan says the next step will be to add checkpoint inhibitors, which should enhance immune response efficacy by blocking the T-cell suppression cancer causes. He continues to collaborate with Cannon and Nagalo, hoping to translate this unprecedented treatment method beyond pancreatic cancers to other cancer sites. To this end, Govindarajan has proposed immune therapy trials to the GI committee of the Southwest Oncology Group’s Cancer Research Network, targeting treatment approaches for patients with gastrointestinal cancers.

“Pancreatic cancer is a deadly disease with a low cure rate, and many patients with pancreatic cancer do not have long-term outcomes that are favorable. If we are successful, it will be a stepping stone forward for improving outcomes for these patients.”

— Rangaswamy Govindarajan, M.D.



MISS AMERICA CHAMPIONS ACCESSIBLE CANCER CARE

BY KRISTINA JOHNSON

A FORCE FOR GOOD in the fight for cancer treatment accessibility in Arkansas is Madison Marsh Morris. A United States Air Force Academy graduate and Fort Smith, Arkansas, native who was crowned Miss America in 2024, Morris is a national advocate for the transformation of cancer care in underserved communities and rural areas.

In 2018, Morris' mother died of pancreatic cancer at the age of 41, only nine months after a shocking diagnosis, which had been identified late due to a lack of obvious symptoms. Recognizing the need for improved pancreatic cancer diagnosis and care,

Morris founded the Whitney Marsh Foundation in her mother's honor in 2019. The nonprofit has since raised more than \$500,000 to fund pancreatic cancer research and programs and to raise awareness for the development of accurate early detection and diagnosis.

Morris is currently pursuing a master's degree in public policy from Harvard's John F. Kennedy School of Government, and she is partnering with the UAMS Winthrop P. Rockefeller Cancer Institute to propose policy changes that seek to address current issues in oncology access and reimbursement for the state of Arkansas.



Morris met with 20-year-old breast cancer survivor, Aria Carter, who received proton therapy as part of her treatment.



Morris (center) toured the Proton Center of Arkansas with Adam Wolfe, M.D. (left) and Fen Xia, M.D., Ph.D. (right).

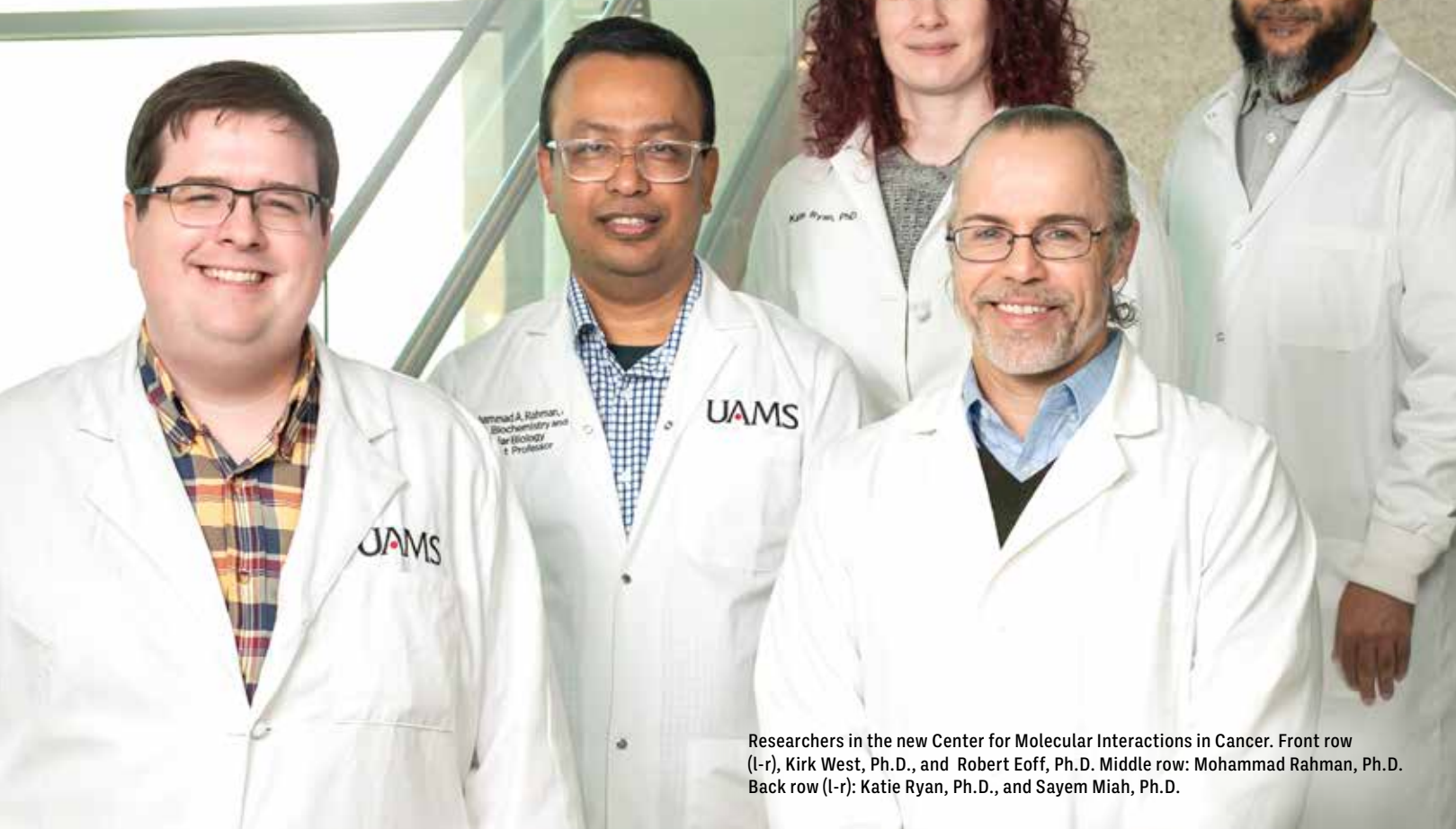
“Advanced diagnostics and treatment are ineffective without a connected, accessible delivery system. Reforming access benefits all cancers.”

— **Madison Marsh Morris**
Miss America 2024

FROM MOLECULES TO MEDICINE

How Researchers are Redefining Cancer Research

BY DEANNA GUPTON



Researchers in the new Center for Molecular Interactions in Cancer. Front row (l-r), Kirk West, Ph.D., and Robert Eoff, Ph.D. Middle row: Mohammad Rahman, Ph.D. Back row (l-r): Katie Ryan, Ph.D., and Sayem Miah, Ph.D.

AT THE UAMS WINTHROP P. ROCKEFELLER CANCER INSTITUTE, **Robert Eoff, Ph.D.**, is pursuing a bold goal: changing how cancer is studied, understood and ultimately treated. A biochemist and molecular biologist by training, his laboratory focuses on how cells repair DNA and how small molecular errors can grow into disease.

In 2024, Eoff's responsibilities expanded from researching DNA replication to directing the new Center for Molecular Interactions in Cancer (CMIC). The CMIC is funded by the

National Institute of General Medical Sciences' (NIGMS), Centers of Biomedical Research Excellence (COBRE) program with support from the Winthrop P. Rockefeller Cancer Institute, College of Medicine, and Arkansas Biosciences Institute. The COBRE program supports the establishment and development of innovative, state-of-the-art biomedical research centers at institutions in Institutional Development Award (IDeA) eligible states, which funds initiatives to boost research in states like Arkansas that historically have received less NIH support.

The CMIC provides resources, mentoring and infrastructure to help new scientists become independent investigators. A key milestone for these new investigators is earning a major grant from agencies such as the NIH, the National Science Foundation or the American Cancer Society. Some of Eoff's success stories include **Mohammad Rahman, Ph.D.**, an assistant professor in the UAMS Department of Biochemistry and Molecular Biology who was recruited to UAMS in 2021 from Cold Spring Harbor Laboratory in New York. Rahman's research team studies RNA-processing pathways in cancer, and he received an NIH R35 research and development grant for his work on tumor-specific gene regulation mechanisms.

Eoff highlighted other project leaders and their research. **Katie Ryan, Ph.D.**, an assistant professor in the UAMS Department of Biochemistry and Molecular Biology, began her tenure-track role in 2023 and investigates how the protein Rnd3 drives lung cancer metastasis, uncovering behavior distinct from other cancer types.

"Her research could lead to more targeted treatments for this disease," Eoff said.

Kirk West, Ph.D., an assistant professor in the UAMS Department of Biochemistry and Molecular Biology, earned an American Cancer Society fellowship. He now studies DNA repair proteins that may influence how tumors respond to radiation therapy.

Sayem Miah, Ph.D., an assistant professor in the UAMS Department of Biochemistry and Molecular Biology, is an expert in mass spectrometry and studies enzyme-driven disruptions in breast cancer signaling with a focus on treatment-resistant subtypes like triple-negative breast cancer.

"Their success is our success," Eoff said. "We are building a family of researchers with one vision: make discoveries that improve outcomes for cancer patients."

A defining feature of the CMIC is its focus on structural biology and molecular biophysics. By training researchers in these approaches, the center enables them to examine cancer at the atomic level. This detailed view helps scientists

understand how tumors form and why they resist certain treatments. It also points to more precise drug delivery strategies and new therapeutic targets.

"The science in the center allows us to build three-dimensional maps of the molecules involved in cancer," Eoff said. "It is like zooming in on a map on your phone until you see the blue house with the stone chimney you have been looking for. That level of detail helps us understand what changes inside tumor cells or nearby tissue."

CMIC's influence goes beyond research. It fosters a culture of mentorship in which junior faculty receive lab space,

funding, coaching in grant writing and guidance in navigating professional challenges. Shared core facilities are another important asset, offering specialized equipment that individual labs could not afford on their own.

Colleagues describe Eoff as humble and approachable, known for celebrating achievements while encouraging open discussion of obstacles. This environment has helped young scientists develop confidence and independence. Within

the first 18 months of CMIC's launch, junior investigators secured \$2.6 million in new grant funding, and total funding rose to \$6.5, including core directors.

Though the CMIC is part of a national initiative, Eoff's vision remains rooted in Arkansas.

"Serve the community with your very best effort and gratitude for the trust placed in our institute," Eoff said. "Every grant won, every high-impact paper and every faculty promotion not only boosts the state's reputation but also brings science closer to better outcomes for cancer patients."

Ultimately, the center is about more than experiments or equipment. It's about creating new paths of discovery and improving lives. Under Eoff's leadership, the CMIC is accelerating cancer research, enhancing Arkansas's role in national science, and making sure patients benefit from every discovery.

"We are building a family of researchers with one vision: make discoveries that improve outcomes for cancer patients."

— Robert Eoff, Ph.D.

UNCOVERING CANCER-CAUSING VIRUSES

BY BRYANT LYTLE

RESearchers in the Cancer Biology Program at the UAMS Winthrop P. Rockefeller Cancer Institute are unraveling the intricacies of gammaherpesviruses (GHVs), stealthy pathogens that put those infected at risk for numerous cancers.

Craig Forrest, Ph.D., leads a lab investigating how GHVs manipulate cells to cause cancer. Forrest's interest can be traced back to his first-year coursework where he learned about viruses that cause cancer, and after completing his doctorate, he decided to focus on virus-driven cancers.

Two types of GHVs — Epstein-Barr virus (EBV) and Kaposi sarcoma-associated herpesvirus (KSHV) — infect and reside primarily in lymphocytes, establishing a lifelong, chronic infection that can be responsible for a variety of lymphomas, carcinomas and post-transplant lymphoproliferative diseases.

“You’re not supposed to say it’s cool that a virus could come in, manipulate a cell, and turn it into a cancerous cell, but I thought the whole process was fascinating and wanted to better understand how it all works,” said Forrest, a professor in the UAMS Department of Microbiology and Immunology.

As his research evolved over time, Forrest became interested in how GHVs thwart the typical immune response to a point where these viruses start mutating cells in a way that develops into cancer. From there, Forrest's team focused on which viral proteins activate p53, a tumor suppressor that regulates transcription of numerous cellular genes involved in cell-cycle arrest, DNA repair, apoptosis, and their impact on long-term infections.

A breakthrough came when Forrest's team made a surprising discovery challenging decades of research around GHV

interaction with p53. Major findings were published in *Nature Communications* in January 2025.

“Our first R01, which we still have, was originally designed to understand how GHVs interact with p53 during latency,” said Forrest. “We discovered that GHVs do not appear to actively inhibit p53 during latency. Instead, we noticed that these viruses were using p53 to slow things down and put the brakes on cellular proliferation during infection.”

“Hopefully, one day our efforts could lead to the development of treatments that could reduce the rate of GHV-related cancer in Arkansas and throughout the world.”
— Craig Forrest, Ph.D.

In addition to his research with p53, which is supported by the National Cancer Institute, Forrest has additional projects supported by the National Institute of Allergy and Infectious Diseases investigating how viral replication creates tumor-promoting environments and testing vaccination strategies to prevent cancer.

“Hopefully, one day our efforts could lead to the development of treatments that could reduce the rate of GHV-related cancer in Arkansas and throughout the world,” said Forrest.

ANSWERING FUNDAMENTAL QUESTIONS

Forrest is not the only cancer researcher studying GHVs at the Cancer Institute. **Mark Manzano, Ph.D.**, also studies KSHV and its relationship to primary effusion lymphoma (PEL), an aggressive B cell cancer that localizes to serous body cavities like the chest, heart or abdomen.

Like Forrest, Manzano's early training focused on the biochemistry of viruses, which fueled a curiosity that led him to a postdoctoral fellowship studying the basic biology of tumor cells and how certain viruses cause cancer.

“Unlike most cancer cells that develop as a result of mutations within a normal cell, viral tumors are caused by the direct disruption of cellular functions by KSHV oncogenes to promote uncontrolled growth,” explained Manzano, an assistant professor in the Department of

Researchers Mark Manzano, Ph.D., (left) and Craig Forrest, Ph.D.



Microbiology and Immunology. “We saw this difference as an opportunity to strip down to the basics and answer fundamental questions central to these viral cancers.”

Funded by a National Institutes of Health (NIH) R01 research grant with the National Institute of Dental & Craniofacial Research, Manzano's current research uses human tumor cells to understand KSHV, specifically looking more closely at what the virus needs to survive and proliferate to understand mechanisms underlying the control of viral latency.

“If we can understand how the virus persists, we could learn how to develop treatments that are able to target it directly,” said Manzano.

COLLABORATIONS AND CONNECTIONS

Forrest and Manzano recently received NIH funding as co-principal investigators on an R21 grant with the National

Institute of Allergy and Infectious Diseases. The overall objective of the project is to evaluate the hypothesis that lytic genes are drivers of GHV-related cancers. They plan to study how lytic gene expression is involved in the two distinct stages of GHV cancers (development and maintenance) using in vivo models.

These kinds of interactions are essential to the advancement of cancer research, and both Forrest and Manzano credit strong collaborations and support from the Cancer Institute as well as the UAMS Center for Microbial Pathogenesis and Host Inflammatory Responses, an NIH Center of Biomedical Research Excellence at UAMS.

“This kind of support in addition to the support I’ve received from the Cancer Institute has been very instrumental in our cancer research efforts,” said Manzano.



“Biomedical research, especially in areas as complex as cancer, requires the input of experts from multiple disciplines. Projects in the Cancer Biology and Cancer Therapeutics programs are often a combination of medicinal chemistry, molecular biology, immunology, data sciences and many more.”

— Marjan Boerma, Ph.D.

FROM BIOLOGY TO THERAPEUTICS

How Scientists and Clinicians are Working Together to Fight Cancer

BY BRYANT LYTLE

RESearchers at the UAMS Winthrop P. Rockefeller Cancer Institute are using X-ray crystallography and cryo-electron microscopy (cryo-EM) to study the three-dimensional structure of molecules associated with cancer. Known as structural biology, this type of research is helping scientists better understand how proteins function in the malignant process. This information is critical in the development of more effective therapies.

At the heart of every cancer center is a powerful culture of collaboration among members and the research programs to which they belong. At the UAMS Winthrop P. Rockefeller Cancer Institute, these interactions often include basic scientists who study how cancer works and clinicians who treat patients.

“Laboratories in the Cancer Biology Research Program perform research into the biological mechanisms that control cancer cell formation, the tumor microenvironment, cancer progression and metastases,” said **Marjan Boerma, Ph.D.**, associate director of basic science at the Cancer Institute. “Their collaborations with researchers and clinicians in the Cancer Therapeutics Research Program facilitate the translation of new knowledge of biological mechanisms into the development of new or improved cancer therapeutics.”

Members in these programs are uniquely positioned to form these partnerships, allowing them to combine their skill sets to facilitate transition of scientific findings through the translational pipeline to untangle the causes and progression of cancer as well as the development of novel therapies.

COLLABORATIVE RESEARCH EFFORTS

Cancer Biology and Cancer Therapeutics members work together in a research effort focused on how interactions of tumor cells and their microenvironment determine their behavior and metastasis. One team, led by **Jesús Delgado-Calle, Ph.D.**, an associate professor in the UAMS Department of Physiology and Cell Biology and co-leader of the Cancer Biology Research Program, studies the role of cells of the tumor microenvironment in the progression of multiple myeloma, a blood cancer that affects plasma cells.

In collaboration with Cancer Biology members **Teresita Bellido, Ph.D.**; **Charles O'Brien, Ph.D.**; **Hayley Sabol, Ph.D.**; and Cancer Therapeutics member **Intawat Nookaew, Ph.D.**, Delgado-Calle and his team found that certain bone cells known as osteocytes, which had been overlooked for decades, actually help tumors grow and resist treatment.

Likewise, Cancer Therapeutics members **Carolina Schinke, M.D.**; **Frits van Rhee, M.D., Ph.D.**; and **Maurizio Zangari, M.D.**, worked with Delgado-Calle's team to study romosozumab, a drug used to treat osteoporosis. They found that romosozumab dramatically improved bone mass and healed damaged areas of bone in multiple myeloma patients, allowing them to conduct a clinical study on three patients with multiple myeloma over a two-year period. This strategy is now leading to further evaluation in larger, randomized trials to assess the long-term benefits and effects of romosozumab on disease progression and quality of life.

“These interactions have been instrumental to the success of our interprogrammatic research,” Delgado-Calle said. “They are funded by the National Cancer Institute (NCI), supported by Cancer Institute developmental funds, and have led to publications in high-impact journals.”

TEAM SCIENCE

To foster transdisciplinary and translational cancer research, the Cancer Institute encourages the use of its developmental funds to support team science efforts. Since 2022, researchers and physicians in the Cancer Biology and Cancer Therapeutics Research Programs have received

three Cancer Institute Team Science Awards to support interprogrammatic projects that bring together members pursuing new cancer-focused research that facilitates transdisciplinary or translational cancer research.

“Biomedical research, especially in areas as complex as cancer, requires the input of experts from multiple disciplines. Projects in the Cancer Biology and Cancer Therapeutics programs are often a combination of medicinal chemistry, molecular biology, immunology, data sciences and many more,” Boerma said. “Therefore, funding interdisciplinary teams is the best way to invest into research projects that have a high likelihood to give us new understanding of cancer and strategies for prevention and treatment.”

Fenghuang “Frank” Zhan, M.D., Ph.D., a professor in the UAMS Department of Internal Medicine and co-leader of the Cancer Biology Research Program, and **Schinke**, an associate professor in the UAMS Department of Internal Medicine and co-leader of the Cancer Therapeutics Research Program, have developed a combination of high-dose ascorbic acid with low-dose melphalan in a Phase I/II clinical trial. This trial has shown that this combination therapy induced complete remission in refractory/relapsed myeloma by targeting significantly elevated cellular iron in myeloma cells (but not in normal cells).

Additionally, **Lyle Burdine, M.D., Ph.D.**, an associate professor in the UAMS Department of Surgery; **Brian Koss, Ph.D.**, an assistant professor in the UAMS Department of Biochemistry and Molecular Biology and co-leader of the Cancer Therapeutics Research Program; and **Analiz Rodriguez, M.D., Ph.D.**, an associate professor in the UAMS Department of Neurosurgery, have received Team Science funding for working on ways to boost the immune system's ability to fight solid tumors.

By taking advantage of the Cancer Institute's collaborative research model and shared infrastructure, collaborations between Cancer Biology and Cancer Therapeutics members enable scientific discovery and allow better treatment options to move through the translational pipeline and ultimately change cancer care.

HOPE IN A DOSE

New Drug Advances Sickle Cell Treatment

BY DEANNA GUPTON

MICHAEL BIRRER, M.D., PH.D., director of the UAMS Winthrop P. Rockefeller Cancer Institute, is known for leading important medical research in his effort to eradicate cancers. Now, he is turning his attention to another serious health problem: sickle cell disease. In a Phase I clinical trial, Birrer is leading a research team investigating the medication Pociredir and how it could change sickle cell disease treatment.

The study, sponsored by Fulcrum Therapeutics, is testing the effectiveness of Pociredir on fetal hemoglobin (HbF) reactivation in adults. Birrer and his research team (pictured on the right), hope Pociredir will help reduce the number of painful crises and decrease inpatient hospital stays for adults, while providing them with long-term results.

“Sickle cell and thalassemia are blood mutations in which specific genes cause red blood cells to distort and behave irregularly,” said Birrer. “Sickle cell disease is caused when mutated hemoglobin causes the red blood cells to

sickle and, ultimately, clog blood vessels.”

Pociredir targets the *BCL11A* gene, the most commonly identified HbF suppressing gene that functions like an on/off switch. Around six months of age, this gene “turns off” the HbF and “turns on” the adult hemoglobin. Adult hemoglobin is not as oxygen rich, which can cause sickling in those with a genetic predisposition to sickle cell disease. The medication aims to reverse that action by reactivating HbF.

“We are seeing good results from the patients. So good, in fact, the patients are asking to stay on the drug.”

— Michael Birrer, M.D., Ph.D.

“If this medication functions as designed, Pociredir could be used to treat other blood conditions like thalassemia and other anemias,” Birrer said.

For 12 weeks, patients simply take a pill daily and check in regularly with the Phase I team. After the initial 12 weeks, the treatment is

stopped but patients continue to be monitored for an additional four weeks. According to Birrer, many of the clinical trial patients have reported positive results.

“We are seeing good results from the patients. So good, in fact, the patients are asking to stay on the drug,” said Birrer.

Birrer explained that a Phase I clinical trial focuses on determining the drug’s safety by testing low to gradually higher doses to identify potential side effects. Phase II studies then evaluate the drug’s effectiveness in a larger group of patients, and Phase III trials expand testing to even more participants to further assess efficacy, toxicity and patient response over longer periods.

“When I trained, many of the drugs were roughly the same, so they had low efficacy,” said Birrer. “Now the FDA will approve a drug based on Phase I testing because there is much better science being conducted and the drugs are less toxic and more effective.”

The team overseeing a Phase I clinical trial for sickle cell disease. Front row (l-r): Vallon Williams, DNP, APRN; Michael Birrer, M.D., Ph.D.; and Ashwini Prasad, M.S. Back row (l-r): Nikki Baxter, APRN; Maroof Zafar, Ph.D.; and Paul Turner, BSN, RN.



SEARCHING FOR BETTER THERAPIES

High-Dose Ascorbic Acid Presents Possible Therapeutic Alternative for Refractory Multiple Myeloma

BY KRISTINA JOHNSON

RESearchers at the UAMS Winthrop P. Rockefeller Cancer Institute are investigating a potentially improved approach to refractory multiple myeloma therapy.

Multiple myeloma is the most common form of bone marrow cancer and is the result of malignant transformation of plasma cells. While currently available regimens are effective and lead to sustained responses, multiple myeloma tends to relapse over time, often leading to refractory and difficult-to-treat disease. There remains an unmet need for treatment approaches in patients who have few therapeutic options, and clinical trials among these patients remain a vital option for access to effective drugs. Aiming to better understand and improve multiple myeloma outcomes, UAMS researchers have initiated a Phase I clinical trial titled “High-Dose Ascorbic Acid in Refractory Multiple Myeloma Therapy.”

Preliminary data has shown that high-dose ascorbic acid (HDAA) can effectively kill myeloma cells by causing oxidative stress, whereby

healthy tissue remains unaffected. Furthermore, the combination of HDAA with a low dose of melphalan (MEL) leads to highly effective myeloma cell death.

The initial goal of this research is to assess whether HDAA, when used together with low-dose MEL, then followed by autologous stem-cell transplantation (ASCT), is safe and effective for patients with relapsed or refractory multiple myeloma. Leading Cancer Institute researchers behind the trial are **Carolina Schinke, M.D., Frits van Rhee, M.D., Ph.D.,** and **Fenghuang “Frank” Zhan, M.D., Ph.D.** The three are also collaborating with the University of Iowa’s Douglas Spitz, Ph.D.

Per the team’s preliminary data, HDAA has already indicated efficacy against cancer with minimal negative side effects when administered intravenously. This effect has been observed in use against multiple solid tumor cancers when combined with chemo and/or radiation therapy. Preclinical trials have also shown HDAA to selectively target

myeloma cells and reduce tumor growth, both when used alone or with MEL. It does this via a unique action mechanism that targets iron metabolism, increasing oxidative stress in cancer cells, and ultimately leading to cell damage or death. Notably, iron tends to be elevated in multiple myeloma cells but not in normal cells. Thus, the team hypothesizes that myeloma cells possess a natural vulnerability to HDAA that makes this treatment approach more effective.

MEL is frequently used on its own for myeloma therapy because it is proven to be an effective single therapy agent. Unfortunately, it also causes severe side effects when administered at the high doses needed to combat multiple myeloma. Promisingly, during preclinical studies, the trial team observed evidence that HDAA works synergistically alongside MEL, with similar efficacy and lessened adverse effects compared to high-dose MEL treatment alone. The investigators are thus hopeful that they may have identified a novel therapeutic approach to myeloma treatment that

“The results from this study have the potential to significantly improve outcomes for Arkansans with multiple myeloma and to reduce long-standing disparities in multiple myeloma care.”

— Carolina Schinke, M.D.

mitigates the toxic effects of the current standard therapy.

This study is significant because it could result in improvements in heavily pretreated and relapsed or refractory multiple myeloma. It is widely known that the most effective treatments for these forms of the disease are toxic, and despite major advancements to myeloma therapy in recent years, the disease remains difficult to cure.

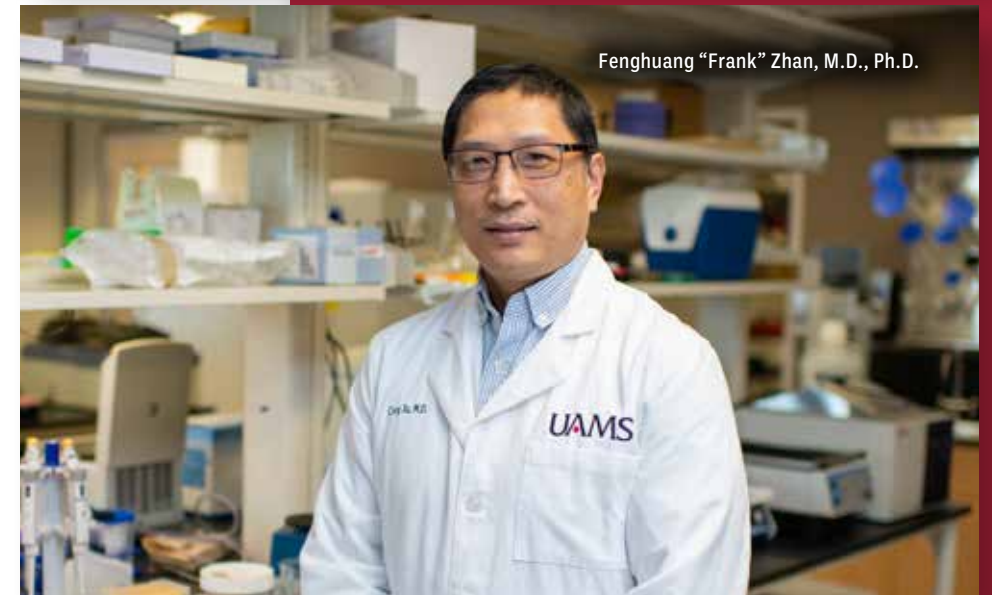
“The results from this study have the potential to significantly improve outcomes for Arkansans with multiple myeloma and to reduce long-standing disparities in multiple myeloma care,” said Schinke.

With these challenges in mind, the HDAA Phase I trial team presses their study forward. Their aim is to provide innovative treatment options that are safe, less toxic and more effective in the treatment of multiple myeloma for Arkansas and beyond.

Carolina Schinke, M.D.



Fenghuang “Frank” Zhan, M.D., Ph.D.



Frits van Rhee, M.D., Ph.D.



FINDING STRENGTH THROUGH SCIENCE AND HOPE

BY DEANNA GUPTON

Michelle Linam

WHEN CONVENTIONAL TREATMENT does not work, patients with multiple myeloma and their doctors often find themselves searching for alternatives.

For Michelle Linam, who has experienced several relapses, the hope of achieving long-lasting remission led her to volunteer for the MagnetisMM-20 Phase 1 clinical trial (Mag20) at the UAMS Winthrop P. Rockefeller Cancer Institute. The trial is led by principal investigator **Carolina Schinke, M.D.**, associate professor, and **Sharmilan Thanendrarajan, M.D., Ph.D.**, associate professor, Linam's treating physician. Schinke and Thanendrarajan are multiple myeloma specialists.

This Phase 1 study is looking into aiding the immune system to combat multiple myeloma, a type of blood cancer. The investigational treatment includes Elranatamab, which is designed to help immune cells recognize and target cancer cells. In one part of the study, Elranatamab is given in combination with other medicines that are designed to weaken cancer cells. In another part, Elranatamab is given with Maplirpracept, which is designed to prevent the signaling between the cancer cells and the immune system that prevents them from being destroyed by the immune system.

In the 10 years that Linam has been fighting this condition, she has had three stem cell transplants, one bone marrow transplant, CAR-T treatment, radiation and chemotherapy. Some of these treatments have involved painful procedures, but for the Mag20 clinical study, only a monthly injection is required.

"Her longest period of remission was about a year and a half following CAR-T treatments," said nurse practitioner Nikki Baxter, MSN, APRN. "She's been fighting for a long time, but it doesn't keep her down."

When first diagnosed, Linam spent 30 days in the hospital, but now, she receives one injection and one immunoglobulin (Ig) infusion a month. She said her participation in the Mag20 study has allowed her to enjoy

her favorite activities. "I play pickleball, and I love to decorate and travel," she said.

On Thanksgiving, Linam attended a football game between the Dallas Cowboys and the Kansas City Chiefs in Dallas with her children and plans to attend a Bon Jovi concert at Madison Square Garden in New York City.

Linam's children have been her strongest support system. "My children are the most rewarding part of my journey because they are so compassionate, and I think they have even become more compassionate to other people."

Her son and daughter, Hunter Linam and Maddie Fowler, modified their lifestyles to help their mother stay as healthy as possible.

"I do not want to be just a survivor, I want to be a 'liver,' and I will not let cancer define me."

— Michelle Linam, *patient*

"When they come home, they wear masks while traveling so they won't bring any possible contaminants to me because they understand my immune system is altered," said Linam.

A crucial element of her journey has been her Phase 1 team:

Thanendrarajan; Maroof Zafar, Ph.D., research program manager; Vallon Williams, DNP, APRN, clinical research nurse practitioner; Paul Turner, BSN, RN, clinical research nurse 1; and Baxter. They represent much more to Linam than just doctors or nurses.

"They are like family," she said. Thanendrarajan, or Dr. T as she calls him, "answers all my questions and will draw diagrams to help me understand my treatment process."

"I felt more hopeful when I saw the amount of knowledge and technology available at the Cancer Institute," Linam explained.

Thanendrarajan and Baxter monitor Linam's response to the treatment, the effectiveness of medications, and the duration of her remission phase. "Nikki, Vallon, and Paul are all great and go beyond when I'm not feeling well," Linam said of her nurses.

"I do not want to be just a survivor, I want to be a 'liver,' and I will not let cancer define me," Linam said.

EXPANDING ACCESS TO CAR T-CELL THERAPY

BY BRYANT LYTLE

FOR PATIENTS WITH LYMPHOMA, chimeric antigen receptor (CAR) T-cell therapies offer hope when conventional treatments have been exhausted. The groundbreaking approach, which reprograms a patient's own immune system to fight cancer, is available to lymphoma patients through clinical trials at the UAMS Winthrop P. Rockefeller Cancer Institute.

Cesar Gentile, M.D., an assistant professor of internal medicine and member of the Cancer Therapeutics Research Program, is helping to expand access to CAR T-cell therapies in Arkansas through multiple clinical trials. After his fellowship, he became passionate about the transformative impact of this type of treatment because it helps patients in a way that chemotherapy cannot.

Unlike chemotherapy, which broadly targets all cells in the body, including cancer cells as well as healthy cells, CAR T-cell therapy works by training a patient's own T-cells to specifically target and kill cancer cells.

"We essentially put these cells through a boot camp and train them to recognize the tumor," Gentile explained. "As soon as those cells are ready, they are reintroduced into the patient's body, and in our case, recognize and get rid of lymphoma cells," he added.

Since 2017, CAR T-cell therapy has been used to treat patients with lymphoma. Currently, only four types of therapies are approved by the U.S. Food and Drug Administration (FDA) for certain B-cell malignancies, including relapsed or refractory non-Hodgkin lymphoma and follicular lymphoma. Initially, the technology was approved to treat acute lymphoblastic leukemia but has since

been approved for other blood cancers such as certain types of leukemia and multiple myeloma.

"Our clinical trials here at the Cancer Institute are focusing on some of these new technologies that are under investigation to help treat lymphoma patients," said Gentile, principal investigator of three clinical trials involving CAR T-cell treatment for lymphoma.

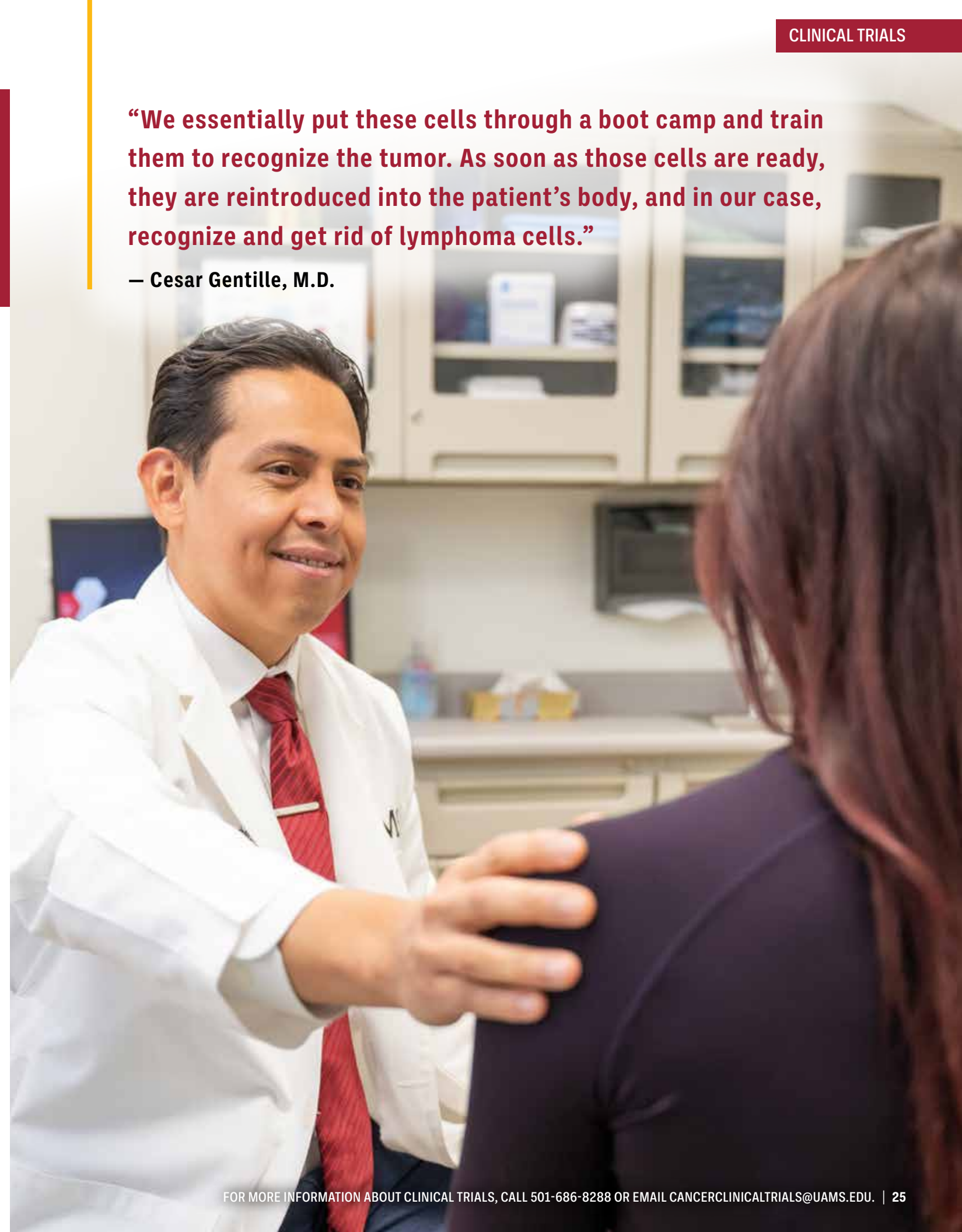
One trial, "A Randomized Phase II trial of Consolidation Therapy Following CD19 CAR T-cell Treatment for Relapsed/Refractory Large B-cell Lymphoma or Grade IIIB Follicular Lymphoma," assesses the safety and efficacy of new consolidation regimens, focusing on patients at high risk for relapse and offering additional treatment to potentially improve outcomes. This trial specifically addresses patients who do not achieve a full response with standard CAR T-cell therapies, giving patients the opportunity to receive additional treatment that could convert a partial response to complete remission.

"Before CAR T-cell therapy, patients who did not respond to chemotherapy and transplant typically survived less than six months. CAR T-cell therapies offer a more precise, targeted form of treatment that allows patients to achieve prolonged remission," said Gentile.

Clinical trials involving CAR T-cell therapies are complex and require a dedicated team-based approach. From physicians and nurses to transplant coordinators and support staff, Gentile's team at the Cancer Institute helps patients navigate these potentially life-changing treatments and return to normal life.

"We essentially put these cells through a boot camp and train them to recognize the tumor. As soon as those cells are ready, they are reintroduced into the patient's body, and in our case, recognize and get rid of lymphoma cells."

— Cesar Gentile, M.D.



PROTON CENTER OF ARKANSAS

Arkansans Benefiting from Access to Rare Proton Therapy Clinical Trials

BY ANA RODRIGUEZ RIVERA AND
DEANN ELDREDGE HUBBERD

Santanu Samanta, M.D.,
Fen Xia, M.D., Ph.D., and
Sanjay Maraboyina, M.D.



AT THE PROTON CENTER OF ARKANSAS, a collaboration between UAMS Health, Arkansas Children's Hospital, Baptist Health and Proton International, clinical research is a priority, and as such, clinical trials continue to open. Clinical trials help bring new and better treatments to patients by carefully studying promising therapies, with patient safety and well-being as the top priority.

The Proton Center of Arkansas conducts clinical trials using proton therapy to improve treatment for challenging cancers and to develop new approaches for common cancers, such as prostate cancer. **Fen Xia, M.D., Ph.D.**, director of the UAMS Winthrop P. Rockefeller Cancer Institute's Radiation Oncology Center, which runs the Proton Center, emphasized the importance of clinical trials for patients with hard-to-treat cancers, especially those often caught at advanced or recurrent stages, making them extremely difficult to treat, which leads to poor survival outcomes.

Proton therapy is a highly advanced type of radiation therapy that delivers radiation to a tumor with pin-point accuracy, protecting the surrounding tissue from radiation exposure and minimizing side effects. Photon radiation therapy, commonly referred to as traditional radiation therapy, deposits most of the radiation outside of the tumor, damaging surrounding tissue and causing debilitating side effects.

The Proton Center of Arkansas is the only facility in the state that offers proton therapy. Currently, only 46 other facilities in the United States provide this type of therapy. As a result, proton therapy clinical trials are limited throughout the country, but Arkansas now has the unique opportunity of being able to access them, allowing patients to stay closer to home for their cancer treatment. As the Proton Center continues to grow, expanding clinical trials creates more opportunities for patients who may have fewer treatment options.

"The Radiation Oncology Center's strong clinical research and clinical trials program helps us develop new treatment

options that can be tailored to each patient's cancer type and stage," said Xia.

Two of these trials are interventional studies that aim to improve treatment for challenging cancers by comparing specific treatment methods to determine the best option.

The first study is a Phase III clinical trial comparing proton therapy with advanced photon radiation therapy for patients with stage I–IVA esophageal cancer. Both approaches are designed to target the tumor while protecting surrounding healthy tissue, and the study aims to determine which treatment offers the greatest benefit for patients. The local principal investigator for this study is Xia.

"The Radiation Oncology Center's strong clinical research and clinical trials program helps us develop new treatment options that can be tailored to each patient's cancer type and stage."

— Fen Xia, M.D., Ph.D.

The second clinical trial is a Phase II clinical trial that studies the effects and how well postoperative or salvage radiotherapy works for the treatment of prostate cancer after radical prostatectomy. The current standard of care for postoperative or salvage radiotherapy is a range of radiation treatment doses, and the range of radiation therapy treatments is slightly higher for salvage radiation

than for postoperative radiation. Researchers want to establish guidelines for radiation therapy by collecting data to set a baseline treatment dose. At the Proton Center of Arkansas, this study is led by **Sanjay Maraboyina, M.D.**, a radiation oncologist and associate professor in the UAMS Department of Radiation Oncology.

Clinical trials do not always compare treatments. Some trials look at patients' medical records to determine which treatment approach had the best results for a particular disease. The Proton Center of Arkansas is participating in an international proton registry that reviews patient medical records to learn which radiation treatments are associated with the best outcomes and fewer side effects. This study is led by **Santanu Samanta, M.D.**, a radiation oncologist and assistant professor in the UAMS Department of Radiation Oncology.

A VOICE RECOVERED

Physician Fights Larynx Cancer with Proton Therapy

BY MARTY TRIESCHMANN

WHEN LONGTIME HARRISON, Arkansas, family physician Mahlon Maris, M.D., began experiencing hoarseness in late 2023, he chalked it up to a bad bout of COVID-19 and the lingering inflammation that can sometimes follow. But months passed, and his voice still hadn't returned. It was the first sign that something more serious was going on.

By March 2024, during a routine visit with his cardiologist, the concern grew. "He listened to my voice and said something wasn't right," Maris recalled. "He referred me to **Adrian Williamson III, M.D.**, and that's where the story really began."

Williamson, a UAMS otolaryngologist, ordered a thorough evaluation. After an initial laser ablation, a minimally invasive procedure, Maris received a sobering diagnosis: stage 3 squamous cell carcinoma of both vocal cords.

Squamous cell carcinoma is the most common form of larynx cancer, accounting for the vast majority of cases. Early detection, often prompted by hoarseness, can lead to high cure rates through surgery, radiation or a combination of treatments. In more advanced cases, symptoms can include sore throat, difficulty swallowing, ear pain or a lump on the neck.

A second biopsy performed at UAMS confirmed Maris' cancer had spread aggressively to the anterior commissure at the front of the larynx where the vocal cords attach and had spread to a lymph node in his neck.

He was promptly referred to UAMS otolaryngologist **Mauricio Moreno, M.D.**, vice chair of adult services for the UAMS Head &

Neck Oncology Clinic, and began coordinated care with **Omar Atiq, M.D.**, UAMS medical oncologist, and **Santanu Samanta, M.D.**, a UAMS radiation oncologist specializing in proton therapy at the Proton Center of Arkansas, located in the UAMS Radiation Oncology Center.

"It was a tough slog. There were days with brain fog, lethargy, decreased appetite and nausea. But I knew I was in the right place."

— Mahlon Maris, M.D., patient

"His options were either surgery, which would have taken his voice, or radiation therapy, which could preserve his vocal cords," said Samanta. "We recommended proton therapy because it could deliver the same powerful curative treatment while minimizing damage to surrounding healthy tissue."

Unlike standard X-ray radiation, proton radiation therapy delivers targeted energy directly to the tumor with reduced radiation exposure to healthy tissues near the mouth, esophagus, spinal cord and brain stem. This precision is especially important for head and neck cancers, where vital functions like speech and swallowing are at stake.

Maris underwent 35 proton treatments, paired with three rounds of chemotherapy.

"It was a tough slog," he admits. "There were days with brain fog, lethargy, decreased appetite and nausea. But I knew I was in the right place."

On July 10, 2025, Maris received the news he'd been hoping for: he was cancer free.

A retired family physician who spent decades caring for others, Maris found himself in an unfamiliar position: the patient.

"Invasive cancer was, obviously, new to me and above my pay grade as a retired country doc," he said. "But from the

moment I walked in, I experienced expert medical care and genuine kindness — true caring. From the person who checked me in to the nurses and doctors, I felt like they were all pulling for me."

He credits his recovery not only to the expertise of his care team at the Proton Center of Arkansas and UAMS, but also to his support system: his wife of 60

Patient Mahlon Maris, M.D.,
and Santanu Samanta, M.D.

years, two devoted adult children and a wide circle of praying friends.

Now on the other side of treatment, Maris is cautiously optimistic and grateful. His voice is returning, and he's regaining energy. More than anything, he wants others facing similar battles to know they are not alone.

"Pray. Let people help you, and you will get through it. You come back to life."



EXPLORING EARLY-ONSET BREAST CANCER

Researcher Investigates
Possible Links Between
Environmental Exposure
and Breast Cancer in
Rural Arkansas

BY KRISTINA JOHNSON

“Cancer is an aging disease, so, why do so many young ladies have breast cancer? That is something the whole nation is trying to find out, and that this cohort allows us to study.”

— Ping-Ching Hsu, Ph.D.

PING-CHING HSU, PH.D., co-leader of the Winthrop P. Rockefeller Cancer Institute's Cancer Prevention and Population Sciences Research Program, took over in March 2022 as principal investigator for the Arkansas Rural Community Health (ARCH) cohort study and initiated a follow-up study titled “Arkansas Rural Community Health-Healthy Environmental Research (ARCH-HER)”.

Funded in December 2024 by the NIH National Institute of Environmental Health Sciences, the goal of the ARCH-HER study is to track breast cancer in mother-daughter pairs selected from the original baseline study, including more than 26,000 women from across all counties in Arkansas. Hsu, an associate professor of Environmental Health Sciences in the UAMS Fay W. Boozman College of Public Health, is the first UAMS researcher to receive federal funding for a large, population-based study on environmental exposure and cancer in rural Arkansas communities.

Fueling Hsu's early interest in the project was her surprise at the rate of early-onset breast cancer reported among the primary subset of participants. Over 45% of the women were diagnosed with breast cancer before the age of 50. Compared to the national average of only 10% of early onset cases, these numbers are very high.

“Cancer is an aging disease,” she said, “so, why do so many young ladies have breast cancer? That is something the whole nation is trying to find out, and that this cohort allows us to study.”

Hsu noted the possibility of recruitment bias, since many participants reported having a first-degree relative with breast cancer. However, according to Hsu, genetics typically accounts for only 5-10% of breast cancer cases. She was intrigued that the high numbers might represent the shared environments, diets and other exposures that families are experiencing together. This notion is what formed the focus for the ARCH-HER study.

Arkansas is known for high cancer incidence and mortality. According to research conducted by

the Cancer Institute, the Arkansas Delta region experiences poorer health outcomes than other areas of the state. Many of the state's most disadvantaged communities are built on generations of agricultural activities, which potentially means exposure to heavy metals, pesticides, burned seasonal crop residue and more. Concerned by the health threat this might pose to Arkansans in the Delta and other rural communities, Hsu and her team are closely examining environmental factors.

To determine the harmful environs of greatest impact on the cohort, the team first linked participant data to U.S. Environmental Protection Agency (EPA) data. The EPA's Air Toxics Screening assessments were examined to see which chemical concentrations were highest in the residential areas of study participants in the breast cancer and early-onset breast cancer subsets. Chemicals such as arsenic, chromium, PAHs (polycyclic aromatic hydrocarbons), formaldehyde and trichloroethylene were among those identified at higher levels — some of the very chemicals used in animals to induce breast cancer. These high chemical concentrations were also seen in other areas of the state, such as Fayetteville, Jonesboro, Pine Bluff and El Dorado. Early indications of these chemical levels appear to coincide with agriculture and industry waste, and that, said Hsu, is of great concern. Direct testing of urine samples from the ARCH participants found that women with high arsenic concentrations in the urine had increased breast density, which is a strong independent risk factor for breast cancer.

Finally, with the collaboration of **Brian Koss, Ph.D.**, co-leader for the Cancer Therapeutics Research Program at the UAMS Cancer Institute, ARCH investigators are relying on the rigor of prior research to show how environmental stresses alter DNA and immune responses. This exploration has shaped the central hypothesis of the study, which states: “Living in disadvantaged communities with high environmental exposure is contributing to epigenetic alterations and immune dysfunction that lead to the increased risk to develop early-onset breast cancer.”

IMPROVING THE HEALTH OF ARKANSANS

How One Epidemiologist is Approaching Prevention and Survivorship Treatment Option for Pancreatic Cancer

BY BRYANT LYTLE

YONG-MOON “MARK” PARK, M.D., PH.D., an assistant professor in the UAMS Department of Epidemiology in the Fay W. Boozman College of Public Health and assistant co-leader of the Cancer Prevention and Population Sciences Research Program, is working to improve the health of Arkansans by providing insight into strategies for cancer prevention and survivorship.

His research focuses primarily on breast cancer, specifically on investigating cancer-related risk factors as well as understanding cardiometabolic complications that can follow cancer treatment.

“Everyday lifestyle factors play an important role in the etiology and prevention of cancer,” said Park. “Diet, physical activity, obesity and chronic diseases such as diabetes are often associated with an increased risk of cancer.”

Park’s research originally focused on chronic metabolic diseases such as diabetes, obesity and metabolic syndrome, and studying how hereditary factors play into those diseases. From there, his research interests shifted to

studying how lifestyle factors like diet and physical activity influence the risk of chronic disease for communities and populations in general.

During his postdoctoral fellowship at the National Institute of Environmental Health Sciences, an institute within the National Institutes of Health (NIH) focusing on environmental health research, Park became interested in breast cancer research while working on the Sister Study, the longest and largest study designed to look at the environmental and genetic causes of the disease over time.

“I realized that many of these risk factors were also associated with breast cancer, and it was clear that these issues were overlapping pieces of the puzzle,” said Park. “It was interesting to me how everyday factors like lifestyle, genetics and environment influence cancer risk and survivorship.”

Beyond cancer prevention, Park also focuses on survivorship, especially cardiometabolic complications after cancer treatment.

Park’s research is funded by an NIH K01 grant focused on understanding

disparities in cardiovascular toxicity among breast cancer survivors in Arkansas and a pilot grant from the Arkansas Breast Cancer Research Program aimed at helping enhance prediction of cardiovascular toxicity in breast cancer survivors. By identifying factors that contribute to health discrepancies among cancer survivors, these projects seek to inform targeted interventions to improve the overall health of Arkansans.

Arkansans, particularly those living in rural and underserved areas, are more likely to experience the negative effects of chronic diseases, including cancer. Survivors in these communities often face added challenges to their health after treatment, highlighting the need to understand how social and environmental factors shape their outcomes.

“My focus is on the bigger picture, specifically looking at two questions: how do social and environmental factors shape cancer and heart health, and why do some communities have worse outcomes compared to others?” said Park.

“My focus is on the bigger picture, specifically looking at two questions: how do social and environmental factors shape cancer and heart health, and why do some communities have worse outcomes compared to others?”

— Yong-Moon “Mark” Park, M.D., Ph.D.

High-risk survivor programs and other tools address unique and complex long-term needs for cancer patients, especially those living in rural and underserved areas in Arkansas, who remain at elevated risk for adverse health outcomes.

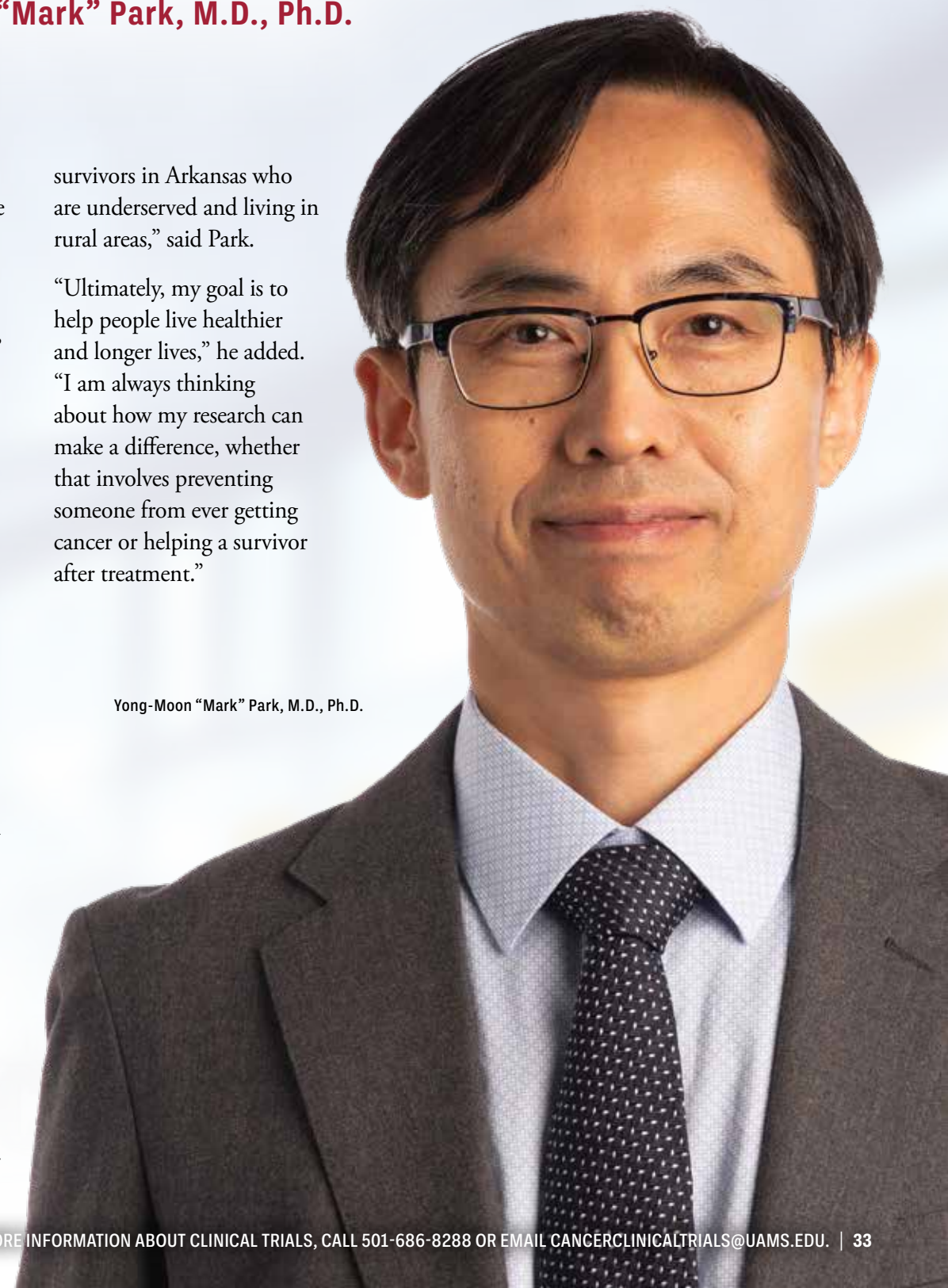
Moving forward, Park plans to continue to examine strategies for both cancer prevention and survivorship. Cancer epidemiology is inherently transdisciplinary, and he understands how important collaborations with oncologists, cardiologists, primary care providers and community partners are when trying to answer complex questions, which will hopefully lead to dedicated resources for those who need them most.

“These kinds of collaborative efforts would allow us to study cancer prevention and care so that we can tailor strategies to specific, real-life situations. This can be especially impactful for cancer

survivors in Arkansas who are underserved and living in rural areas,” said Park.

“Ultimately, my goal is to help people live healthier and longer lives,” he added. “I am always thinking about how my research can make a difference, whether that involves preventing someone from ever getting cancer or helping a survivor after treatment.”

Yong-Moon “Mark” Park, M.D., Ph.D.



COMMUNITY OUTREACH AND ENGAGEMENT

COE Team Experiences Spectacular Year of Growth

BY KRISTINA JOHNSON

“We are always trying to determine what works best for the different communities of Arkansas and always asking, ‘How can we do this better?’”

— Dan Dixon, Ph.D.

COE Team (l-r), Beverly Johnson, Yendel Jones, Dan Dixon, Ph.D., Shalanda Caradine and Ashley Cummins.

THE WINTHROP P. ROCKEFELLER CANCER INSTITUTE’S Community Outreach and Engagement (COE) team has seen exciting developments under the leadership of **Dan Dixon, Ph.D.**, since his appointment as associate director in 2024. Dixon, along with executive director Shalanda Caradine and Beverly Johnson, associate patient navigation director, oversees the efforts of the COE program, along with three additional administrative staff members and 16 patient navigators.

The COE team’s mission is, in short, to reduce the burden of cancer in the catchment area, which is the state of Arkansas. This is accomplished by developing partnerships with local community stakeholders and working together to raise awareness and expand cancer screening, education and research (including clinical trials) that supports better cancer care, cancer prevention, control and survivorship.

“We are always trying to determine what works best for the different communities of Arkansas and always asking, ‘How can we do this better?’” Dixon said.

The past year’s notable developments began with the establishment of a Community Advisory Board.

The advisory board is comprised of 18 community members from organizations around the state; members represent a variety of cancer experiences, community connections, geographic locations and demographics. The group meets quarterly to help inform the Cancer Institute’s strategic plan for research, outreach, education and community engagement, along with creating bi-directional communication between community members, organizations and Cancer Institute leadership.

During the same period, the COE team also established a new committee called the “Internal Advisory Committee.” This advisory group, consisting of Cancer Institute members representing COE, institute leadership and the three Research Programs, plays a key role in reviewing statewide cancer data and needs, defining the Cancer Institute priority areas and identifying relevant issues that will be addressed through research, outreach and policy initiatives. The advisory committee ensures collaboration between COE and all three Research Programs to stimulate research focused on priority areas and involvement in COE activities.

An important function of COE is to establish and support community partnerships with stakeholder groups

throughout Arkansas. This helps the Cancer Institute facilitate cancer research and control activities and provides community members with opportunities for collaboration for the betterment of their local community. A new community partnership was initiated in summer 2025 with Arcare, which is Arkansas’s largest Federally Qualified Healthcare Center (FQHC) network with over 75 locations located in rural communities. This partnership will focus on providing increased access to cancer screening, starting with colorectal cancer. Arcare clinical sites also serve as community hubs for Cancer Institute patient navigators during outreach and educational events.

“For me, seeing community partners work together and use their experience to help us reach the community, and seeing the finished product and how it impacts the community has been amazing,” said Yendel Jones, the COE’s program administrator.

Finally, the COE team integrated the Cancer InFocus tool into their newly developed website. Cancer InFocus provides a dynamic online dashboard for cancer centers to maintain current, comprehensive catchment area data from across the country. For the Cancer Institute, it aids in identifying needs

and areas of inequality in their populations to guide research projects and outreach, along with providing data-based justification for the chosen focus areas of said work. Data can be viewed by county or by census tract and available variable categories include cancer incidence and mortality, screening and risk factors, and various sociodemographic and health data points.

“My background is in cancer prevention, so I carry that mentality into COE,” said Dixon. “Our work allows us to pull together all the data, research, stakeholders, etc., and bring cancer prevention and screening into the community to make a real impact to decrease the cancer burden for our state.”

Both Dixon and Jones noted the importance of the interdependent nature of their team’s working parts. From Cancer Institute leadership to community partners, to clinicians and researchers, to patient navigators, COE thrives on bringing these groups together with the shared goal of improving the lives of all Arkansans.

EDUCATING THE COMMUNITY

Cancer Institute Hosts Town Halls Across Arkansas

BY ANA RODRIGUEZ RIVERA

THE UAMS WINTHROP P. ROCKEFELLER CANCER INSTITUTE COMMUNITY OUTREACH AND ENGAGEMENT (COE) TEAM successfully launched 25 town halls across 23 Arkansas counties in 2025. The town halls focused on cancer prevention, screening and clinical trials and included guest speakers. These events are part of the Cancer Institute’s broader efforts to connect with Arkansans across the state and bring cancer education and health services right to their doorstep.

The COE team held town halls in Woodruff, Union, Greene, Pulaski, Dallas, Crawford, Monroe, Lonoke, Franklin, Baxter, Columbia, Clark, Logan, Desha, Lee, Saline, Prairie, Howard, Ouachita, Drew and St. Francis counties. The COE also returned to communities that participated in the Cancer Institute’s first phase of town halls, including Helena-West Helena in Phillips County and Texarkana in Miller County.

Dan Dixon, Ph.D., associate director of Community Outreach and Engagement, along with Shalanda Caradine, MBA, executive director, and Beverly Johnson, associate patient navigation director, led and organized the town halls.

“These town halls aren’t just about educating our communities; it’s also about encouraging Arkansans to act on what they learn.”
— Dan Dixon, Ph.D.

These events are a massive endeavor, and the entire COE team worked to make each one a success.

“Our patient and nurse navigators across the state are the boots on the ground — they get the word out and connect us with local partners who want to participate,” Caradine said. “Our program administrator, Yendel Jones, MBA, and administrative coordinator, Ashley Cummins, work behind-the-scenes to make these events happen. It truly takes a team, and we have an excellent team.”

Several town halls featured guest speakers, including Matthew Kovak, M.S., CCRP, director of the Cancer Institute’s Clinical Trials Office, and **Ping-Ching Hsu, Ph.D.**, co-leader of the Cancer Prevention and Population Sciences Research Program. They helped the COE team educate Arkansans about cancer prevention strategies and screening guidelines, clinical trials and other research studies available at the Cancer Institute.

The COE staff also worked alongside the Cancer Institute’s mobile mammography team to ensure that town hall attendees had access to breast cancer screenings. The mobile



(Left) Crowd at the Helena-West Helena Town Hall.
(Below) Shalanda Caradine, executive director of COE, and UAMS researcher Ping-Ching Hsu, Ph.D.

Dan Dixon, Ph.D., associate director of Community Outreach & Engagement, (right) visits with Verna Carter (left) and Judy Gaylord at a town hall at the Waldo Westside Church of Christ in Columbia County.



mammography team travels across Arkansas in MammoVans that are furnished with state-of-the-art equipment to perform high-quality exams. The collaboration between the COE and the MammoVan team highlights the Cancer Institute’s priority to make cancer screening services accessible to all Arkansans. Thanks to the Cancer Institute’s new low-dose CT vans, lung cancer screenings will be available during future events as well.

“These town halls aren’t just about educating our communities; it’s also about encouraging Arkansans to act on what they learn,” Dixon said. “Someone in our audience might learn that they fit the criteria for a certain cancer screening or that they are overdue for one. We want to be able to say we have that service available today or connect them with a COE navigator for screening assistance.”

The events are held in accessible, well-known community spaces, such as public libraries, community centers, and other local establishments that offer free admission so that any Arkansan who wishes to attend can do so.

During a town hall held at the Waldo Westside Church of Christ in Columbia County, one attendee, Verna Carter, shared her family’s experience with the devastating disease.

After witnessing several close relatives battle with cancer and then facing it herself, Carter began a nonprofit organization, the Living Stones Foundation, to help minister, provide resources, educate, and advocate for people in her community who are fighting or have fought cancer.

Carter, a native from Magnolia, Arkansas, invited members of the COE team as well as others in attendance to attend Living Stones Foundation events, including their annual Celebration of Life Banquet. In sharing her story, Carter fostered valuable connections among community members in Waldo and surrounding areas. As a result, the town halls often serve as a conduit for Arkansans to connect with their neighbors and engage in meaningful conversations.

The COE team plans to host more town halls in 2026, continuing their mission to connect with Arkansans across the state and bring cancer education and services directly to them. In addition to the town halls, the COE team has cancer patient navigators stationed throughout Arkansas to help connect cancer patients to community resources or other services they might need. Patient navigation services are available to all Arkansas cancer patients, regardless of provider, and no referral is necessary.

Navigation services are available to all Arkansas cancer patients, regardless of provider. No referral is necessary. To learn more, call **1-855-569-3691** or email **COE@UAMS.edu**.

BRINGING CARE TO EVERY CORNER OF ARKANSAS

Cancer Institute's Mobile Screening Fleet Improves Access to Save Lives

BY DEANNA GUPTON

FOR MANY ARKANSANS, access to health care is often measured in miles and hours. In rural counties, hospitals are scarce, specialty clinics may be hours away, and preventive care is often postponed until it is too late. That is why the UAMS Winthrop P. Rockefeller Cancer Institute is taking care on the road with its new Mobile Screening Fleet. The Cancer Institute's Mobile Screening Fleet includes three MammoVans and

three lung computerized tomography (CT) vans that deliver lifesaving screenings directly in the communities that need them the most.

"We provide access to screening by meeting patients in their communities," said **Gwendolyn Bryant-Smith, M.D.**, director of the Breast Center and medical director of the Mobile Mammography Program.

A coordinated team, which includes the van driver, who is also a Spanish interpreter, program manager, and office staff, plan routes and coordinate visits to ensure a seamless experience for each patient. Certified mammography technologists conduct exams, while breast radiologists including Bryant-Smith, Scott Harter, M.D., Patrick Jennings, M.D., and Rachel Taylor, M.D., interpret images and escalate abnormal findings to the next level of care. Once the van returns to UAMS, images are uploaded and read the same day.

"The Mammovan removes barriers and prevents delay in screening that can cost lives," said Bryant-Smith.

To reach more people, the mobile mammography program offers evening and Saturday appointments and partners with employers to host job site screenings during working hours.

"Patients receive same-day education and mammography exams, which makes the experience more convenient for those balancing work, childcare and long drives,"

said Susan Henry, M.S., LCSW, senior administrator for strategic growth and clinical innovation.

With advanced 3D equipment, the MammoVans provide private and comfortable screenings. For many women without reliable transportation, this is the only realistic option.

"Each year, thousands of women are screened, cancers are found earlier, and treatment begins sooner," Bryant-Smith said.



UAMS breast radiologists are (l-r) Nelson Nwumeh, M.D.; Scott Harter, M.D.; Gwendolyn Bryant-Smith, M.D.; Rachel Taylor, M.D.; and Patrick Jennings, M.D.



The goal of early detection guides the Cancer Institute's new mobile lung screening vans. Lung cancer is the leading cause of cancer death in Arkansas, and the state's first mobile units now offer low-dose CT scans (LDCT) for people at high risk, particularly long-time and former smokers. Because lung cancer often has no early symptoms, screening can mean the difference between a curable disease and a terminal diagnosis.

The addition of these vans "makes the Cancer Institute the largest lung screening fleet in the country," Henry said. "With three vans, we should be able to reach every county in Arkansas at least two times per year."

Still, screening alone is not enough. Patients will also receive smoking cessation counseling at their LDCT screening. Lung cancer deaths can decrease 20% through an LDCT screening and that number increases when paired with smoking cessation. In 2024, 2,840 Arkansans were

diagnosed with lung cancer and 1,670 died, a 58% mortality rate.

"We have to educate people about quitting smoking," said **Michael Birrer, M.D., Ph.D.**, director of the Cancer Institute. "It does not help if we treat them medically only for them to return to the same behavior. Education on smoking prevention and cessation is essential."

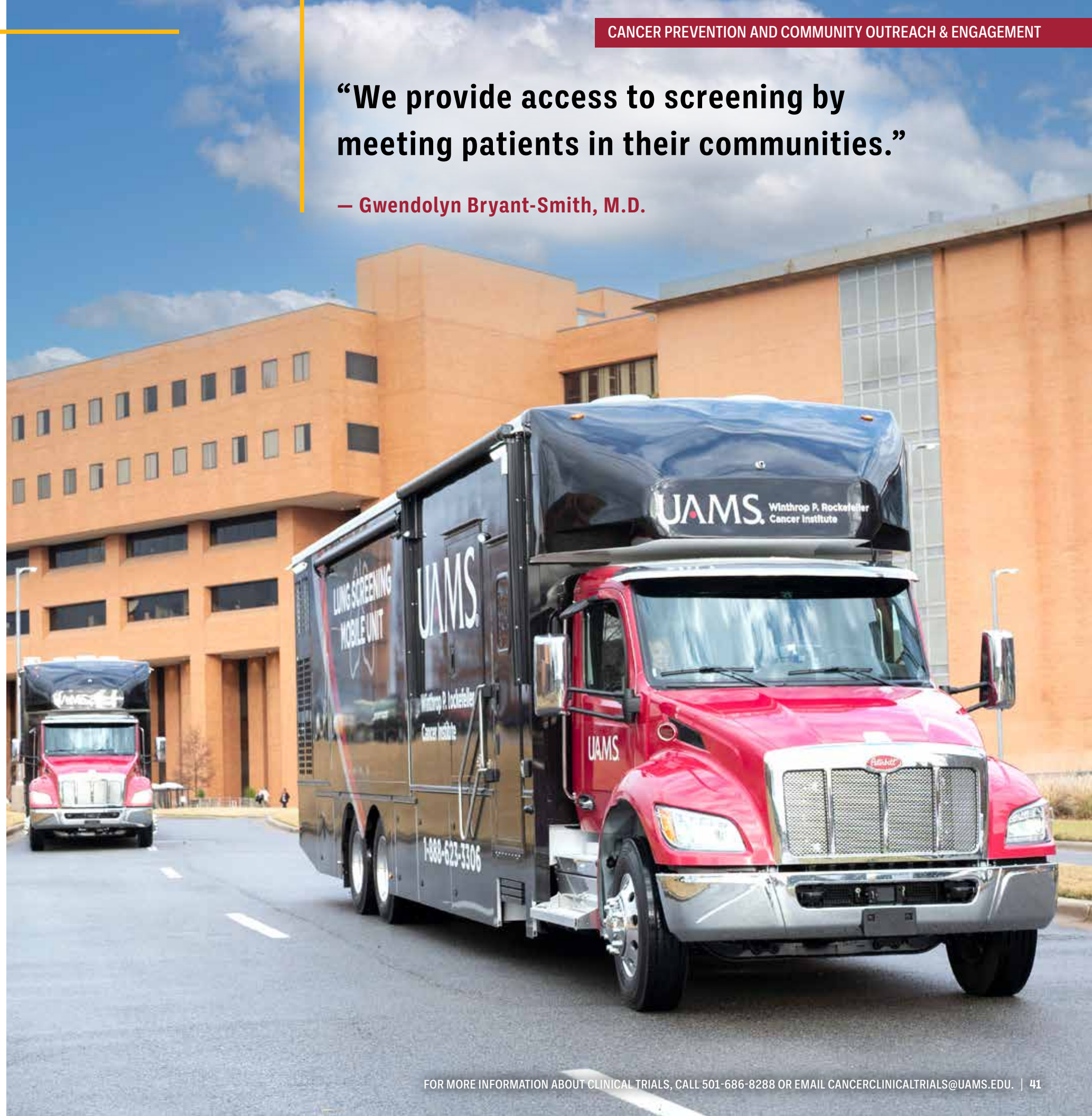
The vans focus on areas with the greatest need. Many Arkansas counties are designated as persistent poverty areas where screening rates fall below national averages. By partnering with local clinics, churches and community centers, the vans help residents in trusted spaces, building confidence and encouraging preventive care.

The Cancer Institute intends to add new technology and increase the number of stops across the state. These mobile units are more than vehicles — they are lifelines on wheels turning geography from a barrier into a bridge.



"We provide access to screening by meeting patients in their communities."

— Gwendolyn Bryant-Smith, M.D.





Clinical Trials Nurse Mentor Program graduates Marlee Lamoreaux and Bryce Rhodes (center) with the Cancer Institute's Clinical Trials Office staff.



Lawrence Cornett, Ph.D.

EXPANDING CANCER RESEARCH AND TRAINING THE NEXT GENERATION

BY DEANNA GUPTON

SINCE 2001, THE ARKANSAS IDEA NETWORK OF BIOMEDICAL RESEARCH EXCELLENCE (INBRE) has transformed the state’s research landscape by connecting academic research institutions like UAMS to rural colleges and universities aimed at expanding training opportunities to the future generations of scientists and researchers.

At the core is INBRE’s partnership with the UAMS Winthrop P. Rockefeller Cancer Institute to train students in cancer research. “I hope this approach ignites a passion for research in the students,” said **Lawrence Cornett, Ph.D.**, director of the Arkansas INBRE.

“When students get into the lab and begin thinking of themselves as researchers, that’s when careers and lives are transformed,” said Cornett.

In 2024, Arkansas INBRE partnered with the University of Central Arkansas and the Cancer Institute’s Clinical Trials Office, led by Matthew Kovak, M.S., CCRP, to establish the Clinical Trials Nurse Mentor Program. Through the program, students learn trial coordination, data management, patient engagement and specimen collection, among other subjects.

“To my knowledge, no other INBRE program in the U.S. is doing this. We are breaking new ground,” said Cornett.

The program graduated four students in 2024 and 2025 with more slated for 2026. “Clinical trial nurses are in short supply,” said Kovak. “We had a wonderful second year, and I hope to expand it to other institutions.”

The INBRE program has brought more research funding to Arkansas, supported scientific discoveries and helped students build careers in research. “When people, resources and time come together, the impact can change lives, strengthen science and benefit the whole state,” said Cornett.

Since its establishment, the Arkansas INBRE has been cited in more than 560 peer-reviewed publications, mentored over 340 students from across Arkansas, and received \$107.8 million in funding, including over \$19 million allocated for 2026-2031.



Matthew Kovak, M.S., CCRP

CANCER BIOLOGY TRACK

Foundational Cancer Knowledge Lays Groundwork for Student Success

BY KRISTINA JOHNSON



Front row (l-r): Bethany Paxton, Samantha Kendrick, Ph.D., and Catherine Kirkpatrick. Middle row (l-r): Emily Cox, Amie Britt and Katie Cruse. Back row (l-r): Mattie Nester, Thomas Williams and Jennifer Gan.

RESearch faculty at the Winthrop P. Rockefeller Cancer Institute are paving the way for UAMS graduate students to master foundational knowledge and career skills via the Cancer Biology (CBIO) track and its inaugural Student Research Seminar series.

Samantha Kendrick, Ph.D., is an associate professor at UAMS and the the program creator of CBIO, which is in the UAMS Graduate School's Graduate Program of Interdisciplinary Biomedical Sciences (GPIBS). Kendrick's laboratory is currently working toward a deeper understanding of how DNA structure impacts key cellular processes including mutagenesis, which facilitate cancer's development, particularly that of diffuse large B-cell lymphoma. The nature of this research also informs her approach in guiding the students in the CBIO program.

"A foundational understanding of cancer and its development is needed in order to pursue answers and address gaps to the higher-level research questions, such as how and why genetic mutations arise in the first place," said Kendrick. This foundation was an element previously missing from the graduate program, which Kendrick and GPIBS program director, Karl Boehme, Ph.D., have since been working to improve by offering unique, hands-on training and research opportunities complemented by a strong didactic education component. This prioritization of instilling fundamental cancer biology knowledge inspired Kendrick and her colleagues to create the Cancer Institute's Student Research Seminar series.

"A key element of graduate study in scientific research is learning to communicate your work in an oral presentation format, and most program tracks rely on a departmental seminar series to teach this. However, Cancer Biology does not have an associated

department and lacks an inherent forum for students to present," said Kendrick.

Understanding the importance of this applied learning, Kendrick partnered with the Cancer Institute to provide a venue for students through a formally registered graduate-level course. In it, students must average attendance at one cancer-relevant seminar per week, in addition to presenting their own dissertation work. The first two student presentations of the year took place Sept. 15, 2025 — with an attendance of over 100 faculty, postdoctoral fellows, staff and students — and were followed by six more talks before the end of the year.

"A foundational understanding of cancer and its development is needed in order to pursue answers and address gaps to the higher-level research questions, such as how and why genetic mutations arise in the first place."

— Samantha Kendrick, Ph.D.

The Cancer Institute supports the CBIO track both programmatically and monetarily. Students are strategically placed in Cancer Institute member laboratories, where they can conduct their dissertation work amid teams who are actively making discoveries in cancer research. The students also have access to the institute's Shared Resources and Core facilities, each of which offers state-

of-the-art technologies that aid in the advancement of graduate research. Students are eligible to participate as affiliate members in one of the three institute Research Programs, where they may attend meetings and promote their work for collaborative opportunities, while also gaining valuable exposure to the broad spectrum of other research being done at the Cancer Institute.

Since July 2025, the Cancer Institute provided \$3,800 for the CBIO's Student Research Seminar series. In addition, three students were each awarded stipends of \$35,000, as well as tuition and fee assistance of more than \$10,000. In total, the Cancer Institute provided nearly \$46,000 in financial support per student, and altogether, provides over \$141,000 to support the CBIO track.

TRAINING THE NEXT GENERATION

Cancer Institute Creates a Legacy of Promising Arkansas Researchers

BY ANA RODRIGUEZ RIVERA

THE UAMS WINTHROP P. ROCKEFELLER CANCER INSTITUTE continues to leave a lasting impact on Arkansas as it trains the next generation of cancer researchers. **Grace Guzman** and **Kinsey Garofalo** are two examples of the many talented students who train at the Cancer Institute and then go on to excel in their cancer research journeys.

In 2019, before her senior year at the University of Arkansas at Little Rock, Guzman participated in the UAMS Summer Undergraduate Research Program (SURP), a nine-week program that introduces undergraduate students to health care research.

Guzman’s mentor in SURP was Cancer Institute member **Analiz Rodriguez, M.D., Ph.D.**, a physician-scientist and director of neurosurgical oncology. Rodriguez inspired Guzman to pursue a career in oncology.

“Neurosurgery is definitely a male-dominated field,” Guzman said. “It was a great opportunity to gain experience under someone like Dr. Rodriguez.”

Guzman credits her experience at the Cancer Institute with preparing her for success as a current medical student. Building relationships with researchers at UAMS taught her how to network with others in the field, preparing and delivering presentations as part of the program helped harness her communication skills, and learning real-world lab techniques gave her an edge when seeking out other opportunities. After SURP, Guzman worked for Rodriguez for an additional two years.

“The exposure to research that I received first through SURP and then working with Dr. Rodriguez helped me get to where I am today,” Guzman said.

As a third-year medical student at UAMS, Guzman completed a research internship in pediatric oncology at

Harvard Medical School. She also completed the Robert A. Winn Clinical Investigator Pathway Program, where she was placed at Virginia Commonwealth University and helped develop a clinical trial for patients with hepatocellular carcinoma. Guzman is looking forward to a successful medical residency and fellowship, and she hopes to one day return to Arkansas as a physician-scientist.

Garofalo’s story similarly reflects the Cancer Institute’s impact on young Arkansas researchers. Her interest in oncology began when both of her parents received cancer diagnoses; sadly, Garofalo’s father passed away from the devastating disease, a circumstance that prompted her desire to help others through research.

As a high school student in 2022, Garofalo participated in the Summer Research Internship (SRI) Program for undergraduates and high school students. Under the mentorship of Cancer Institute member and associate professor of radiation and cancer biology, **Ruud Dings, Ph.D.**, Garofalo conducted lung cancer research in a professional laboratory setting and honed her communication skills with activities like a Grand Rounds-style research presentation.

After SRI, Garofalo completed the 2024 Stead Scholars Internship Program, a collaboration between the UAMS Fay W. Boozman College of Public Health (COPH) and Arkansas Department of Health. Garofalo worked with cancer researchers in the college, including

Yong Zhu, Ph.D., professor of epidemiology and associate director of population and translational science. Now, as an undergraduate student at UA Little Rock, she is an intern in Zhu’s lab.

Like many of the Cancer Institute’s trainees, Garofalo has a deep connection not just to Arkansas but also to UAMS. “I am rooting for the Winthrop P. Rockefeller Cancer Institute,” Garofalo said. “The mentors here are incredibly

welcoming, and the training really helps prepare students for success in the real world.”

An honor student, Garofalo will graduate in May 2026 with a degree in clinical biology. She plans to one day become a clinician and researcher in oncology with a focus in public health.

“The mentors here are incredibly welcoming, and the training really helps prepare students for success in the real world.”

— **Kinsey Garofalo**,
undergraduate student at
UA Little Rock



Grace Guzman (center, holding certificate) during her research internship at Harvard Medical School.



Kinsey Garofalo (right) with her mentor, Yong Zhu, Ph.D.

NEW DEVELOPMENTS IN ONCOLOGY SYMPOSIUM

BY KRISTINA JOHNSON

THE UAMS WINTHROP P. ROCKEFELLER CANCER INSTITUTE hosted its third annual New Developments in Oncology Symposium on May 2, 2025. The event was open to cancer researchers, physicians, nurses and pharmacists from across Arkansas, offering them a free, all-day networking and continuing education (CE) opportunity.

The seminar provided up-to-date developments in clinical cancer care. Lecture topics were presented by expert faculty from the Cancer Institute and included subjects such as cellular therapies in cancer care and new treatment developments for gynecologic, genitourinary, lung, gastrointestinal and breast cancers. In total, this year's symposium saw 296 registered attendees, a 50% increase in registrants from the previous year.

The Cancer Institute also hosted a separate event: the New Developments in Oncology “Be a Part of the Cure” Expo. This expo, centered on the promotion of newly developed therapeutic cancer drugs, provided an opportunity for representatives of leading pharmaceutical companies to meet and network with Cancer Institute clinicians at all levels of cancer care. More than 90 attending representatives presented information about their innovative cancer treatments. More than 40 pharmaceutical companies participated, including Pfizer, AbbVie, AstraZeneca, Daiichi-Sankyo, Merck and Novartis. They provided educational information about their products and offered Cancer Institute investigators an opportunity to ask questions and discuss their use of the agents.

UAMS medical oncologist Konstantinos Arnaoutakis, M.D., discusses minimal residual disease at the third annual New Developments in Oncology Symposium.



CANCER INSTITUTE RESEARCH COMMUNITY GATHERS FOR FIFTH ANNUAL RESEARCH RETREAT

BY ANA RODRIGUEZ RIVERA

UAMS CANCER RESEARCHERS gathered May 7, 2025, at the Robinson Center in downtown Little Rock for the fifth annual Winthrop P. Rockefeller Cancer Institute Research Retreat. The event brought together approximately 200 Cancer Institute members from across UAMS' five colleges and a graduate school and focused on the theme, "Developing the Next Generation of Cancer Therapies for Arkansans."

Three poster sessions showcased more than 60 research projects on topics that ranged from the structural biology of specific cancers impacting Arkansans to community engagement across the state. The Cancer Institute's Clinical Trials Office, the Community Outreach and Engagement Office and Shared Resources as well as UAMS' Translational Research Institute and BioVentures also participated. Student **Thomas Williams** won the Outstanding Graduate Student Award for his poster, "Defining the role for PCK2 in T-cell metabolic plasticity in the solid tumor microenvironment," and postdoctoral fellow

Maha Hanafi, Ph.D., won the Outstanding Postdoc Poster Award for her poster entitled "Discovery of a novel class of dual RET/Aurora B kinase inhibitors with efficacy in lung cancer cells."

Featured speakers included Cancer Institute Director **Michael J. Birrer, M.D., Ph.D.**, UAMS Executive Vice Chancellor and College of Medicine Dean **Steven A. Webber, M.D.**, and keynote speaker **Akash Patnaik, M.D., Ph.D.**, associate professor of medicine and Clinical & Experimental Therapeutics program leader from the University of Chicago Comprehensive Cancer Institute. As the recipient of the 2025 Director's Spotlight Award, hematologist oncologist and co-leader of the Cancer Institute's Cancer Therapeutics Research Program, **Carolina Schinke, M.D.**, presented "Novel Therapeutics in Multiple Myeloma." Cancer Institute associate director of basic science, **Marjan Boerma, Ph.D.**, and program administrator, **Abigail Saunders**, organized the retreat.

INVESTMENT IN SAVING LIVES

Be a Part of the Cure Walk and Gala for Life Raise Record \$3.3 Million

BY DEANNA GUPTON



WAR MEMORIAL STADIUM and the Statehouse Convention Center once again rolled out the red carpet for the Winthrop P. Rockefeller Cancer Institute's two largest annual fundraisers. The events netted a record \$3.3 million for cancer research, patient care programs, and community outreach and engagement efforts.

More than 1,700 people gathered May 3, 2025, for the annual Be A Part of the Cure Walk. Seventy teams with participants from 71 cities and 10 states walked to help raise a record \$470,000 to support cancer research, early detection programs, community education and outreach, and most of all, to recognize those currently fighting cancer and to honor loved

"The Walk is all about hope. It's about staying in the fight until we have beaten cancer."

— Elizabeth Birrer, Be A Part of the Cure Walk co-chair

ones who have lost their battle with the disease.

Emceed by travel columnist and native Arkansan Leslie Murphy, walkers visited vendor and information booths, enjoyed light snacks, cold drinks and music throughout the event. The course wound through scenic areas as families, friends and survivors shared stories about their cancer journeys. Star Wars characters in costume posed for photos, while children had their faces painted and played games in the Kids Discovery Zone.

The Meadow Park Elementary School Drumline and Cheerleaders escorted walkers out of the gates onto the course.

"There is a sense of camaraderie, unity and the understanding that no one fights this disease alone," said Elizabeth Birrer, co-chair of the event.

Among the teams was Autumn's Army that walked in honor of a young wife, mother and friend who lost her tongue cancer battle. "They walk for others, to raise awareness and to make the next person's experience less painful," said Birrer.

"The Walk is all about hope," said Birrer. "It's about staying in the fight until we have beaten cancer."

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Gala for Life



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On September 20, 2025, the Cancer Institute's second signature fundraiser, the Gala for Life, honored the life and service of Nancy "Jo" Smith, who served UAMS for more than 45 years. With a matching gift from the Willard & Pat Walker Charitable Foundation, the event raised \$2.8 million.

The "Angels Among Us"-themed event featured a dinner of Steak Diane with barbecue shrimp, peach and cream salad, and white chocolate mocha crème brûlée tarts. Guests were entertained by songwriter Becky Hobbs who sang the song "Angels Among Us."

Special guest JC Smith, son of the late Nancy "Jo" Smith, received the Willard and Pat Walker Tribute Award in her honor. Gala chair, Mandy Macke, and co-emcee Ben Hall welcomed more than 800 guests to a night of celebration and remembrance.

"This award is given to a person who has made an outstanding contribution to the Cancer Institute. Jo's service and contributions to the Cancer Institute and UAMS are unmeasurable," said Judy Cheek, Cancer Institute special events director.

A tribute video of Smith summed up her UAMS legacy. "I always loved

helping take care of people," Smith said. "I know not everyone gets this award, and it makes me very humbled that I am thought of that way."

"Every dollar we receive tonight is an investment in saving lives," said **Michael Birrer, M.D., Ph.D.**, director of the Cancer Institute. "Together, we're bringing us closer to a future where cancer no longer dictates or controls the countenance of our families or tomorrow."

More information about fundraising events and institutional involvement is on the Cancer Institute's website at cancer.uams.edu/get-involved.

AUTUMN'S ARMY

One Woman's Legacy Lives On

BY BRYANT LYTLE

EACH YEAR, THE BE A PART OF THE CURE WALK, hosted by the Winthrop P. Rockefeller Cancer Institute, brings more than 1,700 walkers in the fight against cancer, raising funds for cancer research in Arkansas. Since 2022, a growing army of walkers has gathered not just to raise funds but to honor the memory of Autumn Wilder, who passed away at 28 from an aggressive form of tongue cancer.

"She was one of those people who could keep up with everybody," her husband Kyle Dineen said. "She always knew what was going on and was a good listener. She was someone that everyone wanted to open up to."

Wilder's life was defined by her ability to connect to others. As a human resources professional at Lexicon Steel Company in Little Rock, she took pride in helping people find employment, often advocating for candidates who "didn't look good on paper" but deserved a chance. According to Dineen, her instincts were rarely wrong.



Kyle Dineen (holding the sign) during the Be a Part of the Cure Walk, along with members of Autumn's Army.

Her journey with tongue cancer began in a seemingly harmless way. A small white spot appeared on her tongue, which she initially dismissed. When it continued to grow, their first doctor treated it as irritated tissue, assuming she was too young for cancer. After the growth came back, a biopsy finally revealed squamous cell carcinoma, making Wilder the youngest woman in Arkansas to develop this type of cancer.

The cancer proved to be relentlessly aggressive, returning twice despite surgery, chemotherapy and radiation treatment, and eventually worked its way into her lymph nodes. During the second recurrence, Wilder was pregnant, and treatment options were limited. Their daughter, Haven, was born between cancer battles, her name chosen deliberately.

"Autumn and I joked that after all we had been through, we wanted to have a little safe haven from all the troubles of the world," Dineen said. "She is amazing and just like her mother in so many ways."

Wilder underwent more chemotherapy and radiation treatment after giving birth, and she lost her ability to speak clearly and eat, which were two of her favorite things to do. By the time the family was celebrating Haven's first birthday, the cancer had climbed a nerve into Wilder's skull.

"We enjoy participating in the Walk because we know how important cancer research is and how important it is to have treatment options early on."

— Kyle Dineen

On January 12, 2022, six days before her 29th birthday, Wilder woke in the middle of the night and told her husband, "I think it's time." Dineen called friends, family, and just about anyone she had known so that they could speak to her and have a few last words.

"She was facing death, and she wasn't scared," Dineen said. "She just told everyone what they needed to hear."

She told me she was proud of me, and she told her friends to stay strong."

Her massive network of former classmates, colleagues and friends rallied around Dineen to support the cause, and Autumn's Army formed. At the 2025 Be a Part of the Cure Walk on May 3, 2025, Autumn's Army received recognition for their consistent participation and fundraising, with Dineen accepting the award on stage.

"We enjoy participating in the Walk because we know how important cancer research is and how important it is to have treatment options early on," Dineen said.

Haven, now 5, listens to her mother's voice every night through recordings her father compiled in her favorite stuffed giraffe.

"It's important that we spend as much time as possible with the people who impact our lives," Dineen said. "Haven asks about her mom pretty much every day, and it's important that she knows her mom is still there laying a foundation."

AWARDS & HONORS



PAT FRANKLIN, APRN
Retired

Patricia Franklin, APRN, CTTS, a nurse practitioner with the UAMS Division of Thoracic Surgery, retired in August 2025 after serving more than 20 years as a tobacco cessation specialist. She was instrumental in starting a low-dose CT screening program at UAMS, which began in 2014. Since then, Franklin provided on-site tobacco-cessation counseling to help others become tobacco free. In addition, she initiated “Freedom from Smoking” groups to provide community members, employees and patients with the skills to quit smoking. Franklin graduated in 1987 with her Bachelor of Science in Nursing and then in 2003 with a Master of Nursing. She has a broad nursing background working in cardiology, internal medicine and oncology.



STEVEN POST, PH.D.
Retired

Steven Post, Ph.D., associate director of shared resources and leader of the Cancer Biology Research Program at the UAMS Winthrop P. Rockefeller Cancer Institute, retired after 17 years at UAMS. He was a professor of pathology in the College of Medicine and served as the scientific director of the Translational Pathology Shared Resource. Post received his doctorate from the University of Chicago and completed a postdoctoral fellowship at the University of California San Diego. While at UAMS, he served as the director of the Division of Experimental Pathology and as his department’s vice chair for research. Post’s research interests focused on understanding how macrophages detect and respond to changes in their microenvironment, with a particular interest in the role of tumor-associated macrophages in breast cancer progression.



**SYDNYE SHUTTLEWORTH, M.D.,
PH.D. CANDIDATE**
National Cancer Institute Ruth L. Kirschstein
National Research Service F30 Award

UAMS doctoral student Sydney Shuttleworth is the recipient of a National Cancer Institute (NCI) Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F30). The F30 program supports promising doctoral candidates who are performing dissertation research and training for an M.D./Ph.D. degree in a scientific health-related field relevant to the mission of the NCI. Shuttleworth is currently a doctoral student in the laboratory of Brian Koss, Ph.D., studying immunotherapy to treat solid tumors.



HAYLEY SABOL, PH.D.,
AACR John Kincade
Scholar-in-Training Award

Hayley Sabol, Ph.D., received the John Kincade Scholar-in-Training Award from the American Association for Cancer Research (AACR) for her abstract titled, “Notch inhibition as therapeutic approach to eliminate dormant cancer cells in multiple myeloma.” Scholar-in-Training Awards are highly competitive and recognize outstanding young investigators presenting meritorious proffered papers at the AACR Annual Meeting. Sabol is currently a post-doc in the laboratory of Jesús Delgado-Calle, Ph.D., studying multiple myeloma.



**REHAM SEWILAM,
PH.D. CANDIDATE**
National Cancer Institute F99/K00
Predoctoral Fellow Transition Award

Reham Sewilam, a Ph.D. student in the UAMS Graduate School and a trainee of the UAMS Winthrop P. Rockefeller Cancer Institute, has become the first graduate student in Arkansas to receive the highly competitive National Cancer Institute (NCI) Predoctoral to Postdoctoral Fellow Transition Award. The NCI F99/K00 Predoctoral to Postdoctoral Fellow Transition Award supports outstanding Ph.D. and other research doctoral candidates as they complete their dissertation research training (F99 phase) and transition in a timely manner to mentored, cancer-focused postdoctoral career development research positions (K00 phase). The award provides two years of support to complete Sewilam’s doctoral research and four years of funding for postdoctoral training. Sewilam is currently a doctoral student studying how aggressive cancers survive therapy-induced stress and develop resistance to treatment in the laboratory of Robert Eoff, Ph.D.



**KONSTANTINOS
ARNAOUTAKIS, M.D.,**
2025 Winthrop P. Rockefeller Cancer Institute
Auxiliary Distinguished Honoree Award

The Winthrop P. Rockefeller Cancer Institute Auxiliary recognized Konstantinos Arnaoutakis, M.D., as its 2025 Distinguished Honoree. Arnaoutakis is a hematologist and oncologist at the UAMS Winthrop P. Rockefeller Cancer Institute, where he is a professor of medicine and fellowship program director in the Department of Internal Medicine, Division of Hematology and Oncology. The Cancer Institute Auxiliary provides information, service, compassion and hope to cancer patients and their loved ones. Each year, the auxiliary selects a Cancer Institute faculty or staff member in honor of his or her dedication to the institute’s mission. In addition to his clinical and research work, Arnaoutakis has served as faculty for the Harvard Macy Institute and as a facilitator with the Academy of Communication in Healthcare, focusing on improving communication in health care. He is also a graduate of the American Society of Clinical Oncology Education Scholars Program. His primary interests are lung cancer and medical education.

NEW HIRES/EXPANDING ROLES

The following leadership changes were announced in 2025.



Deukwoo Kwon, Ph.D. – Director, Biostatistics Shared Resource

Deukwoo Kwon, Ph.D., was named director of the Biostatistics Shared Resource for the UAMS Winthrop P. Rockefeller Cancer Institute. He is also a professor in the UAMS Department of Biostatistics. Before coming to UAMS, he was an associate professor of Biostatistics for the Division of Clinical and Translational Sciences at The University of Texas Health Science Center at Houston. He has 12 years of experience in cancer research at the Sylvester Comprehensive Cancer Center, University of Miami and the Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai. His primary research area covers statistical methods applied to clinical trials and epidemiologic studies related to cancer, novel approaches to statistical design and analysis of Phase I and Phase II clinical trials, survival analysis, longitudinal data analysis, Bayesian inference and high-dimensional data analysis. He also specializes in risk estimation for radiation exposure with complex dosimetry uncertainty, as well as solution development for problems emerging in the fields of genomics and genetics. Since 2023, he has served as an associate director of the Statistical and Data Analysis Center (SDAC) of the AIDS Malignance Consortium, a role in which he oversees all statistical activities in the SDAC and organizes training opportunities for consortium scholars.

Ren Xu, Ph.D. – Division Director, Radiation Oncology Translational Research

Ren Xu, Ph.D., is a professor and the newly appointed division director of translational research in the College of Medicine's Department of Radiation Oncology. Prior to joining UAMS, he served as a tenured professor of pharmacology and director of the Breast Cancer Translational Research Group at the University of Kentucky's Markey Cancer Center and College of Medicine. At the University of Kentucky, he also served as the director of their Markey Research Seminar Advisory Committee, among other endeavors. Xu's primary research focus is the study of microenvironmental cues and their modulation of breast cancer progression, with an overarching goal to identify novel strategies for inhibiting breast cancer metastasis and drug resistance. His recent work on this effort has focused on the biological function and regulation of extracellular matrix (ECM) microenvironment during breast cancer progression, which has been continuously supported by multiple NCI R01 grants. In addition to his research, Xu is deeply committed to mentorship. Several of his junior faculty mentees have successfully secured National Institutes of Health (NIH) R01 and foundation grants.



Ping-Ching Hsu, Ph.D. – Co-Leader, Cancer Prevention and Population Sciences Research Program

Ping-Ching Hsu, Ph.D., has been named co-leader of the Cancer Prevention and Population Sciences Research Program at the Cancer Institute. Hsu is a tenured associate professor in the UAMS Fay W. Boozman College of Public Health's Department of Environmental Health Sciences. She previously served as an assistant professor in the same department, as well as in the college's Department of Epidemiology. Hsu leads a research laboratory that focuses on biomarker discovery using large omics datasets, including global metabolite profiling, or metabolomics. Her team investigates the "metabotype" of oxidized lipids and metabolites in patients and animal models, aiming to find early indicators of chemotherapy-induced cardiotoxicity in breast cancer patients and individuals at high risk for cancer. Hsu also has completed extensive research work on the contribution of cigarette smoking to the disparity of lethal prostate cancer in African American men. Hsu is currently the principal investigator for the Arkansas Rural Community Health (ARCH) cohort, a population-based study examining environmental exposures and cancer health disparities among more than 26,000 women across all counties in Arkansas. Her firsthand experiences with health disparities in the Arkansas Delta have fueled her commitment to uncover the drivers of health disparities in rural and underserved communities, with the goal of informing prevention strategies. She and the ARCH study were honored with membership in the National Cancer Institute Cohort Consortium in 2024, and she will serve on the Steering Committee of the Consortium, which oversees its overall policy, management and scientific direction, from 2026 to 2028.



Brian Koss, Ph.D. – Co-Leader, Cancer Therapeutics Research Program

Brian Koss, Ph.D., was appointed co-leader of the Cancer Institute's Cancer Therapeutics Research Program. Koss works as an assistant professor in the UAMS Department of Biochemistry and Molecular Biology. Koss received the NIH Director's Early Independence Award in 2021, followed by the UAMS Graduate School Outstanding Faculty Achievement Award in 2022. Koss leads an active research laboratory focusing on uncovering the cellular and molecular pathways that can be leveraged to enhance T-cell function and persistence in solid tumors, with particular emphasis on T-cell exhaustion, proteostasis and metabolic stress. His program integrates advanced proteomics, systems biology and T-cell engineering to identify strategies that overcome immune dysfunction in challenging cancer microenvironments. To translate these discoveries, his lab is actively developing cellular therapies and combination strategies aimed at improving outcomes for patients with treatment-refractory solid tumors. Koss is also deeply committed to graduate education and mentorship.

UNSUNG HEROES



Linda House

Administrative Coordinator, Cancer Institute Patient Support Pavilion

Linda House, administrative coordinator for the UAMS Winthrop P. Rockefeller Cancer Institute Patient Support Pavilion, is known for her compassion, reliability and organizational skills. After retiring from the Pulaski County Special School District, she began volunteering at the Cancer Institute in 2011 and was hired the following year. A steady presence in the Patient Pavilion, House helps patients navigate appointments, provides resources like wigs during treatment and fosters a welcoming environment. She credits supportive co-workers and helping patients as her greatest motivations.

“Linda takes patients through the process of finding just the right style, length and color. She often gets positive comment cards from patients who are grateful for her stories and her explanation of different ways to wear their new wig.”

— Jacob Adney, Guest Hospitality manager



Morgan Morrow, DNP, APRN

Morgan Morrow, DNP, APRN, is an advanced practice registered nurse in the Division of Hematology and Cellular Therapy at the Cancer Institute. With 10 years at UAMS, Morrow sets the tone for each patient's journey while strengthening the Cancer Institute's mission of excellence in patient-centered service.

“She is a thoughtful, inquisitive and very trustworthy provider. Ms. Morrow does not hesitate to wear multiple hats to help our patient in their journey to fight cancer.”

— Muthu Kumaran, M.D., associate professor, Division of Hematology-Oncology



Rosalyn Jones

Senior Phlebotomist

Rosalyn Jones is a senior phlebotomist in the Cancer Institute's Blood Draw lab. She brings skill and kindness to a stressful part of patient care, making blood draws seamless. With a gentle touch, Jones collects vital samples that guide diagnosis and treatment while easing patient anxieties. For 19 years, she has exemplified professionalism, accuracy and patient advocacy at the Cancer Institute. Her dedication ensures that those navigating cancer treatment receive care that is both efficient and compassionate, reflecting the Cancer Institute's core values.

“Rosalyn Jones is an asset to the cancer blood draw lab; she's dedicated to her co-workers and the patients. Rosalyn keeps a smile on her face and always goes above and beyond to help.”

— Dollie Allen-Williams, H(ASCP), Phlebotomy Laboratory supervisor



Vallon Williams, DNP, APRN

Vallon Williams, DNP, APRN, is an advanced practice registered nurse at the Cancer Institute. Williams has spent the past two and a half years as a clinical research nurse practitioner for Phase 1 clinical trials. She assesses patients, aligns their care with protocol requirements and connects them to therapies available only at the Cancer Institute. Her meticulous care advances cancer research while giving patients access to promising therapies that represent hope for the future.

“Vallon is dealing with very sick patients. She does a tremendous amount of research, she sees patients with me, makes sure the patients receive good clinical care, and she is great at clinical management. She does an unbelievable job.”

— Michael Birrer, M.D., Ph.D., Cancer Institute director



Patient Mahlon Maris, M.D., rings the bell at the Proton Center of Arkansas.

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HOW TO REACH US
cancer.uams.edu/contact-us

The Winthrop P. Rockefeller Cancer Institute at UAMS is Arkansas's only academic cancer research and treatment center of excellence providing the full continuum of care for cancer patients with common to the most rare, complex diseases. We are home to the only stem cell transplantation and cellular therapy program in the state. Our world-renowned Myeloma Center is the international leader in the treatment of multiple myeloma and related blood cancers. With more than 25 years of clinical and research excellence, our novel therapy approach results in continually improved survival rates.

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