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(UAMS)

TRI

Translational Research Institute



2024
Annual Report



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THE TRANSLATIONAL RESEARCH INSTITUTE IS SUPPORTED BY THE NATIONAL INSTITUTES OF HEALTH (NIH) NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES (NCATS), CLINICAL AND TRANSLATIONAL SCIENCE AWARDS (CTSA) PROGRAM UL1 TR003107, KL2 TR003108 AND TL1 TR003109.

Translational Research Institute (TRI)

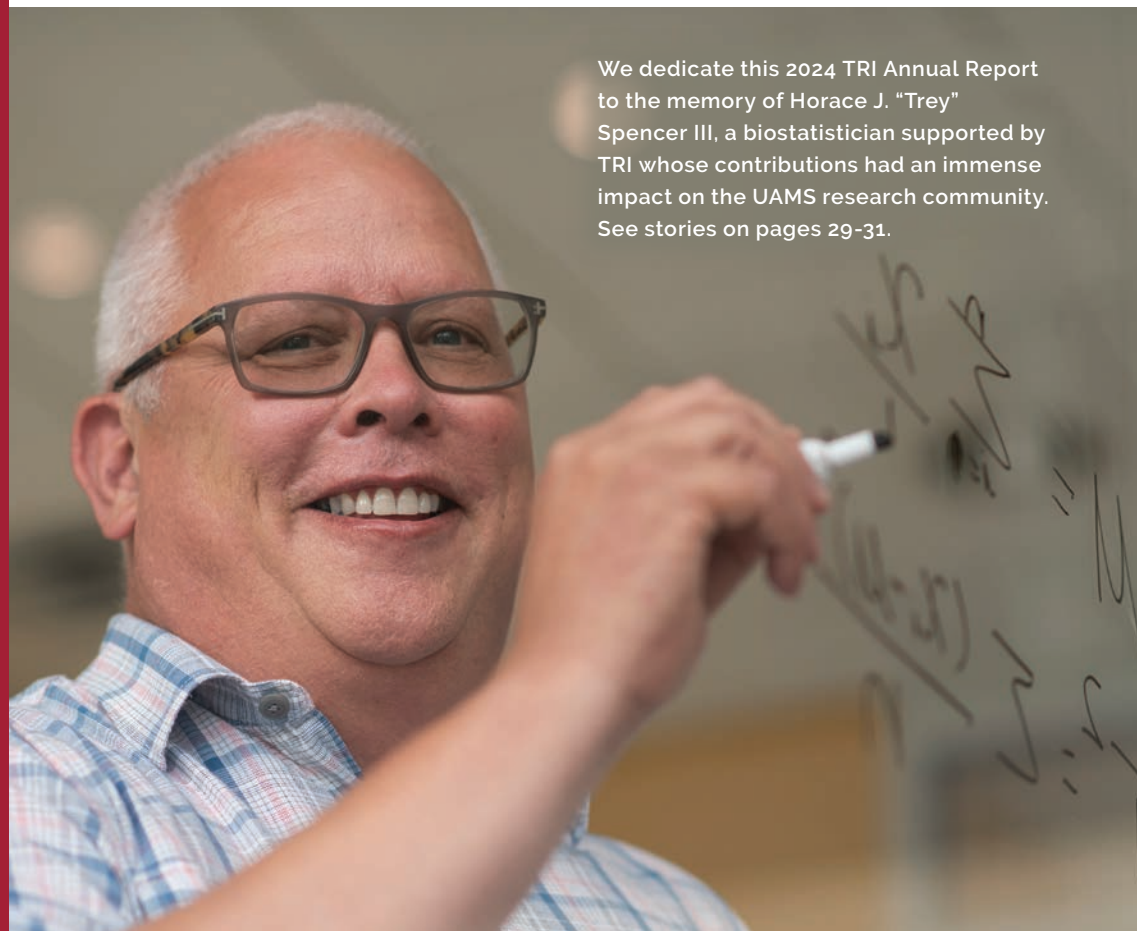
TRI PROVIDES SERVICES AND RESOURCES TO ENSURE THE SWIFT TRANSLATION OF RESEARCH INTO HEALTH CARE ADVANCES. THIS SUPPORT IS AVAILABLE TO RESEARCHERS AT UAMS, ARKANSAS CHILDREN'S HOSPITAL AND ARKANSAS CHILDREN'S RESEARCH INSTITUTE, AND THE CENTRAL ARKANSAS VETERANS HEALTHCARE SYSTEM (TRI HUB PARTNERS).

Mission Statement

OUR MISSION IS TO DEVELOP NEW KNOWLEDGE AND NOVEL APPROACHES THAT WILL MEASURABLY ADDRESS THE COMPLEX HEALTH CHALLENGES OF RURAL AND UNDERREPRESENTED POPULATIONS.

Vision Statement

OUR VISION IS TO BE A THRIVING TRANSLATIONAL RESEARCH ECOSYSTEM THAT CATALYZES DISCOVERIES INTO HEALTH SOLUTIONS FOR RURAL AND UNDERREPRESENTED POPULATIONS.



We dedicate this 2024 TRI Annual Report to the memory of Horace J. "Trey" Spencer III, a biostatistician supported by TRI whose contributions had an immense impact on the UAMS research community. See stories on pages 29-31.

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Research Expo
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Message from the Director

DEAR READER,

This 2024 annual report marks the final year of a pivotal five-year CTSA funding cycle. It has been both gratifying and challenging, with COVID-19 testing us almost immediately.

Our TRI-supported research teams rose to the occasion, and as you will read in these pages, our investigators continue to demonstrate the power of translational science. The past year has been filled with achievements and innovations that will improve health and health care, especially for rural and underserved populations. Many of these successes are coming directly out of our training programs for postdoctoral fellows and junior faculty.

Our KL2 Mentored Research Career Development Scholars Program is a shining example, with trainees since 2019 receiving more than \$4.4 million in external funding. One of our scholars, Nakita Lovelady, Ph.D., MPH, leveraged her KL2 project to secure an NIH grant to support implementation of her novel hospital-based violence prevention project. We also highlight the substantial institutional support that has helped this prestigious program thrive.

Our Community Engagement Core led by Tiffany Haynes, Ph.D., continues to innovate with community-based participatory research (CBPR) training for teams of academic researchers and their community partners. We highlight a CBPR team that received a Patient-Centered Outcomes Research Institute award to address health disparities for women involved in the criminal justice system.

In our feature of the TRI Health Sciences Innovation and Entrepreneurship (HSIE) Program, we pay tribute to Nancy Rusch, Ph.D., who stepped down in 2023 as its founding director. Dr. Rusch was an exceptional leader of this novel program, and she diligently planned for a smooth transition by working closely with Kevin Sexton, M.D., and John Imig, Ph.D., to prepare them as successors. As you will read, the HSIE program is in great hands.

This report also honors the memory of Trey Spencer, M.S., a TRI-supported biostatistician whose expertise, principles and kindness impacted so many projects across UAMS for nearly three decades.

As we went to press, we were excited to receive the notice of award for a seven-year cycle of CTSA funding. Our exciting new plans will build upon the momentum established over the past five years as we further advance translational science to benefit the health of rural and underserved populations in Arkansas and beyond!




Laura James, M.D.

Director, Translational Research Institute
Associate Vice Chancellor for Clinical and Translational Research, UAMS

Cycle Breaker

PROJECT LED BY KL2 SCHOLAR NAKITA LOVELADY,
PH.D., MPH, HELPS VICTIMS OF VIOLENCE



Nakita Lovelady, Ph.D., MPH (right), says the success of her implementation research depends on strong community collaborations with experts such as Anna Huff Davis, a long-time partner of the College of Public Health and TRI who provided key community health worker perspective to Lovelady's study during the evidence-based quality improvement process.

UAMS is one of six sites to receive NIH funding
as part of the Community Firearm Violence Prevention Network to
conduct research on firearm injury and mortality prevention.

Continued from page 5

UAMS patients with stabbing and gunshot wounds are receiving more than medical care as part of an NIH-supported program co-led by TRI KL2 Scholar Nakita Lovelady, Ph.D., MPH.

Lovelady and her mentor, Nickolas Zaller, Ph.D., received the \$1.42 million NIH grant in 2023 to support a hospital-based violence prevention project.

An assistant professor in the Fay W. Boozman College of Public Health, Lovelady is in her final year of the two-year KL2 Mentored Research Career Development Award program.

"The NIH grant expands our current local research portfolio on Hospital-based Violence Intervention Programs (HVIPs) – building upon the preliminary findings from both my KL2 and grants from the city of Little Rock," said Lovelady, the founding director of Arkansas' Arkansas' first HVIP - UAMS Project Heal.

The five-year phased NIH project will allow Lovelady and Zaller to refine the UAMS HVIP to address key barriers and facilitators, and later test the feasibility, acceptability and efficacy of this multi-level intervention using a hybrid effectiveness implementation approach. The project's focus is on secondary violence prevention through hospital-community partnerships to prevent escalation and/or revictimization from firearm violence among African Americans in central Arkansas, where violent assault is greatest.

"This project represents an extension of the foundational work Dr. Lovelady has been leading for the past several years," Zaller said. "Importantly, we are one of only six sites nationally to be selected to participate in an NIH funded research network seeking to address the growing public health issue of gun violence in our communities. I am very proud to be partnering with Dr. Lovelady in this transformative work."

"This unique NIH grant will help us optimize our HVIP + Community model and fully test it for both intervention and implementation effectiveness, ultimately providing

significant implications for scale-up within our state and across the South," Lovelady said.

She noted that Arkansas ranks sixth nationally in firearm homicide rates, and disparities persist as the rate is significantly higher for Black males in Arkansas and nationally.

The project, titled, "The HVIP+ Community Model: A Community Violence Prevention Program in a Southern State," is a collaboration with the team's local community partner, Center for Healing Hearts and Spirits, led by Joyce Mosley Raynor.

As part of the project, patients may receive mental health services and social services that may help them escape a cycle of violence. Project Heal also helps victims find housing, transportation, legal assistance, and jobs.

"Dr. Lovelady is an emerging leader in implementation science."

— Geoffrey Curran, Ph.D.

Lovelady is a 2023 Graduate Fellow of the NIH Randomized Behavioral Clinical Trials Summer Institute and a 2023 Implementation Research Institute (IRI) Fellow at Washington University. She was also honored as one of the Arkansas Times Visionaries for 2023.

"Dr. Lovelady is a pioneer in developing strategies to reduce gun-related violence in the United States," TRI Director Laura James, M.D., said. "She is on the forefront of this issue in Arkansas, and her work has tremendous implications for other states around the U.S. seeking to reduce gun-related violence."

Geoffrey Curran, Ph.D., director of the UAMS Center for Implementation Research and TRI's Implementation Science Scholars Program, is also a mentor for Lovelady.

"Dr. Lovelady is an emerging leader in implementation science," Curran said. "She is breaking new ground by applying implementation science principles and strategies in the area of violence prevention."



Joyce Raynor (left), with Nakita Lovelady, Ph.D., is founder and executive director of the Center for Healing Hearts & Spirits, a vital community partner on the project.

The KL2 program provides two years of intensive training and mentorship to help scholars become independent scientists. It also provides **75% salary support** up to \$100,000 and \$25,000 each year for research, tuition, travel expenses and educational materials.



FINDING ANSWERS

Nishank Jain, Ph.D. (center), with mentors Jerry Ware, Ph.D. (left), and John Arthur, M.D., Ph.D. (right).

NOVEL RESEARCH AIMS TO REDUCE HEART ATTACKS, STROKES IN KIDNEY PATIENTS

UAMS' Nishank Jain, M.D., is using his KL2 Mentored Research Career Development Scholar Award to advance an exciting new area of research that could lead to reduced heart attacks and strokes in kidney patients.

Jain's work is focused on inflammation in the blood of chronic kidney disease (CKD) patients, which puts them at high risk for heart attacks and strokes. Prior to receiving the KL2 Award in 2022, two other career development awards helped him find that anti-platelet inhibitors reduced inflammation in CKD patients. The discovery raised an obvious question: Why?

"We found this effect in humans, so we wanted to go to the lab to answer how and why this was happening," said Jain, an associate professor in the College of Medicine Department of Internal Medicine, Division of Nephrology. "That was the inspiration for the KL2 Award."

Jain's primary mentors and collaborators on the project include John Arthur, M.D., Ph.D., a professor and chief of the Division of Nephrology, and Jerry Ware, Ph.D., who is providing the laboratory and platelet biology expertise. Ware is a professor in the Department of Physiology and Cell Biology.

The laboratory work involves using mice to determine why platelets are increasing inflammation in kidney

disease and how the platelet inhibitors decrease inflammation. Ultimately, he hopes the research will lead to an anti-platelet drug.

Jain's results since receiving the KL2 have led to a \$606,000 award from the NIH National Institute of General Medical Sciences in 2023. The grant is a supplement to the NIGMS-funded Arkansas IDEa Network of Biomedical Research Excellence program led by UAMS' Lawrence Cornett, Ph.D., distinguished professor of physiology and cell biology.

"The KL2 has been a great help in giving me the protected time from clinical responsibilities so that I can focus on this work."
— Nishank Jain, M.D.

"This is novel research, and it has been well received," said Jain, who also received \$250,000 from the Dialysis Inc., Foundation.

The NIGMS grant is funding a related study in which Jain is analyzing the blood of adult volunteers who are healthy, have CKD, or have had a kidney transplant. The study will lead to a better understanding of microparticles

released from platelets as possible drivers of inflammation in CKD.

He is seeking additional funding from the NIH and the Department of Veterans Affairs (VA). He was close to receiving a VA award and resubmitted his application in March this year.

"The KL2 has been a great help in giving me the protected time from clinical responsibilities so that I can focus on this work," he said. "It helps me publish more manuscripts and generate more data so that I can make an even more compelling argument for my federal grant applications."

Jain had 40 published papers as of March and more than 20 since joining UAMS in 2016.

The KL2 has also led to new collaborations at Arkansas Children's Research Institute for other kidney-related research projects.

But the greatest benefit of his KL2, he said, is the mentorship from Arthur, Ware, J.L. Mehta, M.D., Ph.D., a distinguished professor of medicine and physiology and biophysics, and the late Susan Smyth, M.D., Ph.D., who was dean of the College of Medicine.

"All researchers generate ideas, but it's crucial for those ideas to be steered in the right direction to have success," he said. "Their guidance has been instrumental in helping me follow the right path."

Toward Personalized Care

The KL2 program was renamed the **K12 program** in July 2024. K12 scholars receive two years of didactic and mentored research training, including **75% salary support** (up to \$100,000) and **\$25,000 each year for research-related expenses** such as supplies, travel, etc.

Tremaine Williams, Ed.D., a 2023 graduate of the KL2 program, hopes his NINR-funded heart failure study can help medical teams improve care.

"The KL2 provided the protected time to generate the pilot data, protected time for my mentor, Dr. Kevin Sexton, to guide me, funds to cover the publication costs, and a structured plan for acquiring the knowledge and skills that I needed to conduct the R21's research plan."

— Tremaine Williams, Ed.D.

NIH Supports KL2 Scholar's Study of Human-Computer Interaction, Influence on Heart Failure Patient Outcomes

KL2 scholar Tremaine Williams, Ed.D., is applying a biomedical informatics approach to better understand how nurses influence outcomes of heart failure patients.

His project is supported by a two-year, \$406,897 R21 award from the NIH National Institute of Nursing Research (NINR). Its focus is on African American heart failure patients, whose hospitalization rates are nearly 2.5 times that of white heart failure patients nationally.

His team's approach could potentially help nurses and other care team members fine tune risk stratification to improve personalized care for higher risk patients and better predict what types of care they need.

"It's this intersection of human-computer interaction, how they're working with these computational tools within the electronic health record to improve patient outcomes," said Williams, an assistant professor in the College of Medicine Department of Biomedical Informatics.

Williams' prior research found that patient care teams with registered nurses saw reduced hospitalizations and readmissions for all congestive heart failure patients. The study was published in the journal PLOS One, and it is the foundation for his NIH/NINR-funded study.

Williams completed TRI's two-year KL2 Mentored Research Career Development Scholar Award program in 2023. He said the program was essential for getting his research off the ground.

"The KL2 provided the protected time to generate the pilot data, protected time for my mentor, Dr. Kevin Sexton, to guide me, funds to cover the publication costs, and a structured plan for acquiring the knowledge and skills that I needed to conduct the R21's research plan," Williams said.

College of Medicine Dean Steven A. Webber, M.D., pledged to support up to **three scholars** starting with the 2024 cohort.

Institutional Partners Deliver for TRI KL2/K12 Early Career Training Program

The popular and prestigious KL2 Mentored Research Career Development Program has a history of robust support from TRI's institutional partners, with 2024 shaping up to be another exceptional year.

The two-year translational research training program provides 75% salary support and \$25,000 a year for research support, tuition, education and travel. Since the beginning of the current CTSA funding cycle in 2019, 28 scholars have enrolled, with 13 graduating by June 30, 2023.

The program, which was to be renamed "K12" in July this year, includes support from NCATS and TRI's institutional partners, which include the UAMS College of Medicine, Arkansas Children's Research Institute (ACRI), UAMS Winthrop P. Rockefeller Cancer Institute and the Central Arkansas Veterans Healthcare System (CAVHS).



John Arthur, M.D., Ph.D.

"Our institutional partner support has allowed us to nearly double participation in the KL2 program, and our scholars have done very well," said **John Arthur, M.D., Ph.D.**, TRI associate director and co-director of the program.

Graduates of the program are better prepared to successfully apply for early career NIH K

awards or NIH R21 and R01 grants, as well as grants from other federal agencies and private foundations.

KL2 scholars enrolled since 2019 secured \$4.6 million in funding through March 2024, with six as principal investigators on NIH grants.

"Our institutional partner support has allowed us to nearly double participation in the KL2 program, and our scholars have done very well."

— **John Arthur, M.D., Ph.D.**

"I think the reason our institutional partners keep on funding the KL2 program is they like the results of the training they get," said Arthur, also professor and chief of the Division of Nephrology in the College of Medicine.

NCATS funding covers four active scholars each year, although with three already funded in 2024, NCATS support is available

for only one additional scholar this year.

College of Medicine **Dean Steven A. Webber, M.D.**, was already familiar with the KL2 program when he joined UAMS on March 1, and he pledged to support up to three scholars after Arthur shared TRI's success with the program as well as the prospect of having fewer scholars this year.



Steven A. Webber, M.D.

Webber sees the program as a great investment. "Supporting the KL2 program is vital for the College of Medicine, as it cultivates a diverse cohort of successful

Number of KL2 scholars supported by TRI institutional partners since 2019:

Arkansas Children's Research Institute – 5

Winthrop P. Rockefeller Cancer Institute – 4

College of Medicine – 2

Central Arkansas Veterans Healthcare System – 2.

early-career faculty and prepares them to engage in cutting-edge, impactful translational research," he said.

The college previously supported two scholars in the 2022-2024 cohort.

"It's a terrific program with an impressive track record of productivity that speaks to its effectiveness, and its commitment to diversity aligns with our values of inclusivity and equity," said Webber, also UAMS executive vice chancellor. "By focusing on translational science innovations and serving rural and underserved populations, the KL2 program helps ensure that our research can overcome persistent barriers to address health disparities."

Michael Birrer, M.D., Ph.D., vice chancellor and director of the Cancer Institute, also sees great value in the program.



Michael Birrer, M.D., Ph.D.

"The Winthrop P. Rockefeller Cancer Institute is delighted to continue a close collaboration with the Translational Research Institute. There is no better example of this than the KL2 program, which has supported bright young investigators interested in cancer research," he said.

"It's a terrific program with an impressive track record of productivity that speaks to its effectiveness, and its commitment to diversity aligns with our values of inclusivity and equity."

— **Steven A. Webber, M.D.**

ACRI President **Peter Mourani, M.D.**, said the program "is a cornerstone of ACRI's investment in the future of our research enterprise. By providing dedicated mentoring, career development resources and protected research time for our junior faculty, the KL2 program empowers them



Peter Mourani, M.D.

to flourish as independent investigators and secure future grant funding. Their success translates into groundbreaking discoveries that benefit our institution's reputation and ultimately improve maternal/child health."

Richard R. Owen, M.D., director of the Center for Mental Healthcare & Outcomes Research and associate chief of staff for Research at CAVHS, said the program is a significant



Richard R. Owen, M.D.

benefit to the UAMS junior faculty based there as well as to the overall Department of Veterans Affairs.

"Career development programs that provide intensive mentoring and substantial protected time for research are the best way for early career researchers, including clinicians, to get training and research experience in order to succeed," Owen said. "CAVHS support for KL2 scholars helps these investigators develop their career in VA research, and helps the facility retain talented clinicians while growing the CAVHS research program."

KL2 scholars enrolled since 2019 had secured **\$4.6 million in grant funding** through March 2024.

Peter Mourani, M.D. (left), views the KL2/K12 program as a cornerstone investment. Here, the ACRI president listens as KL2 scholar Yong-Chen William Lu, Ph.D., discusses his poster at TRI Research Day 2023.



Six Researchers Receive KL2 Scholar Awards in 2023

Six early-career researchers were selected in 2023 to receive two years of funded translational research training and support in the TRI KL2 Mentored Research Career Development Scholar Award Program.

The promising junior faculty researchers were selected for the 2023-2024 program (renamed K12 in 2024) through a competitive application process. KL2 scholars receive two years of mentored translational research training, 75% salary support and up to \$25,000 a year for research, tuition, travel and education.

The scholars, their project titles and primary mentors are:

KATY ALLISON, PH.D., MPH, research assistant professor, Fay W. Boozman College of Public Health Department of Health Behavior & Health Education

"Optimized Implementation Strategies to Support Pregnancy-Related Remote Patient Monitoring"

Primary Mentor: Geoffrey Curran, Ph.D.

MICHAIL MAVROS, M.D., assistant professor, College of Medicine Department of Surgery (Oncology)

"Venous Thromboembolism in Pancreatic Cancer Patients Undergoing Pancreatectomy: Risk Factors and Effectiveness of Pharmacoprophylaxis"

Primary Mentor: Mario Schootman, Ph.D.

BRIAN D. PICCOLO, PH.D., assistant professor, College of Medicine Department of Pediatrics

"Mechanisms by Which Culturally Specific Foods Influence Infant Gut Development and Barrier Function"

Primary Mentor: Mario Ferruzzi, Ph.D.

MEGHA SHARMA, M.D., assistant professor, College of Medicine Department of Pediatrics, Division of Neonatology

"Beyond Race: Objectively Assessed Skin Color and its Association with Pulse Oximeter Bias in Critically Ill Infants"

Primary Mentor: Mario Schootman, Ph.D.

ANKITA SHUKLA, M.D., assistant professor, College of Medicine Department of Pediatrics, Division of Neonatology

"PERFORM: Persistent Effects of Intrauterine Growth Restriction on Infant Brain Development: A Comparative MEG Study"

Primary Mentor: Hari Eswaran, Ph.D.

ALICJA URBANIAK, PH.D., instructor, College of Medicine Department of Biochemistry and Molecular Biology

"Monensin and its Derivatives as Adjuvants to Immune Checkpoint Inhibitors for the Treatment of Metastatic Breast Cancer"

Primary Mentor: Alan Tackett, Ph.D.

Funding for the program comes from TRI, the Winthrop P. Rockefeller Cancer Institute, College of Medicine, Arkansas Children's Research Institute and Central Arkansas Veterans Healthcare System.



Mario Schootman, Ph.D., has modeled Path 2 R and Path 2 K on similar successful programs at other institutions.

PROVEN WINNERS

TRI ADOPTS SUCCESSFUL PROGRAMS TO INCREASE NIH FUNDING

One of the first things Mario Schootman, Ph.D., did when he arrived at UAMS in January 2022 was to see how its research enterprise compared to peer institutions. He discovered plenty of opportunity for increasing the number of NIH early career K- and R-series awards.

"We are substantially behind other peer institutions, but we have some proven strategies that will help us close the gap," Schootman said, mentioning such peers as Saint Louis University and the University of Kentucky, University of Oklahoma and University of Nebraska.

Schootman is TRI's co-director of Translational Workforce Development and a professor in the College of Medicine Department of Internal Medicine, Division of Community Health and Research.

In 2023, he created the Path 2 R program, adapted from a proven grant development program at the University of Minnesota called the Proposal Preparation Program. The Path 2 R follows Schootman's launch of the Path 2 K program in 2022, modeled on successful programs at

Duke University and the University of Alabama, Birmingham.

Both highly structured programs lean heavily on individualized grant coaching from faculty with strong track records of NIH funding.

"The support we're providing is helping our early-career researchers write terrific grant applications," Schootman said.

"We identified what works, and then we adapted it slightly to what we are doing here."

— Mario Schootman, Ph.D.

Of the nine researchers who submitted a career development application since the start of the program 1.5 years ago, two are waiting on their Notice of Award.

The Path 2 R program was still working with its second cohort of applicants in spring 2024, and two of the first cohort's participants were planning to resubmit applications.

A key difference between the programs is the participation of paid external mentors in the Path 2

R. There are currently three outside mentors, one each from the University of California, San Diego, Medical College of Wisconsin, Milwaukee, and Johns Hopkins University.

"We found excellent faculty with strong grant-writing skills who can help our scholars," Schootman said. The need for outside mentors arose, he said, because UAMS is a relatively small research institution with a more limited pool of available mentors.

The University of Minnesota, which has more than 10 years of data from its program, found that for every dollar spent in a given year, \$17 came back — funds that the institution likely would not have received otherwise. The estimated rate at which participants obtained funding was about 35%, which exceeds the national annual NIH grant funding rates by about 50%. The findings were published in the journal *Academic Medicine*.

"We identified what works, and then we adapted it slightly to what we are doing here," Schootman said. "The Path 2 R program is really just getting going, and I'm excited to see that it's already helping our scholars get off to a great start."

As part of the CORES study, Karen Dickinson, M.D., directed a video involving patient prejudice in the UAMS Simulation Center.

Novel Multi-Institutional Study Confronts Patient Prejudice

CONSORTIUM OF RURAL STATES (CORES) PILOT AWARD

In a project involving three rural CTSA institutions, UAMS' Karen Dickinson, M.D., is co-leading a novel effort using simulated scenarios to help health care teams manage patient prejudice toward providers.

Dickinson, a surgeon and interprofessional simulation education expert, is working with co-principal investigators Michael Andrae, M.D., Ph.D., professor of anesthesiology at the University of Utah, and Anita Fernander, Ph.D., executive diversity officer and professor at the University of New Mexico.

Their work was funded in 2023 by a one-year Consortium of Rural States (CORES) pilot, with each institution receiving \$25,000.

"Nothing like this collaborative project has been done before in this area," said Dickinson, director of Interprofessional Education Simulation and Clinical Skills Training at UAMS. "It's challenging to provide this education because these are sensitive issues, but it's important

and ultimately benefits both providers and patients."

In the simulated scenarios, patients challenge their health providers with expressions of bias and prejudice. The incidents, based on real-life experiences, have been created as part of a multi-step process in which a comprehensive simulation-based educational program is being created to equip health care teams with the tools to manage patient prejudice toward providers.

In addition to helping clinical teams effectively manage patient prejudice and bias, the project addresses the issue as a barrier to translational science due to its negative impact on diversity in the clinical research workforce.

The CORES pilot is providing the resources to develop and record simulated scenarios. Health care providers who have experienced prejudice and bias will watch the videos, and experts in cognitive task

analysis will follow up with structured interviews to gain participants' perspectives and glean details from their personal experiences. The results will inform development of a simulation-based education program.

"This work is needed because it's a common experience, and it can be very detrimental on multiple levels, most importantly to the patient-provider relationship," Dickinson said. "We chose simulation as an active learning strategy to support and equip all members of the team to deal with this situation."

The collaboration was inspired by the 2022 American College of Education Accredited Educational Institute (ACSAEI) initiative to collaborate with the ASA Simulation Education Network (SEN) at the annual Surgical Simulation Summit meetings to foster interprofessional simulation education. The meeting generated connections between UAMS and the University of Utah, which led to the collaboration with the University of New Mexico.

In addition to helping clinical teams effectively manage patient prejudice and bias, **the project addresses the issue** as a barrier to translational science due to its negative impact on diversity in the clinical research workforce.

"It's a challenging area to provide education on because these are sensitive issues, but it's important and ultimately benefits both providers and patients."

— Karen Dickinson, M.D.

"Conversations were already happening as a result of the ACSAEI and ASA SEN meetings, then we learned about the CORES pilot opportunity, and we knew it could really help get this project off the ground," Dickinson said.

Other UAMS co-investigators on the project are Faiza Khan, M.D., an associate professor, and Rania Elkhateb, M.D., an instructor, both in the Department of Anesthesiology.

She is excited to be working with experts in other fields and seeing how the multi-institutional effort benefits the project. She noted that Fernander has unique expertise as a subject matter expert and leads a strong diversity, equity and inclusion team as well as having access to a strong audio-visual department for creating the videos, and Andrae is extensively published on the subjects of health disparities and social determinants of health.

"We're all bringing complementary knowledge so that we can do together what we could never do individually," she said. "Without the CORES grant, there's no way we could have done this as effectively as we are."

Three UAMS Faculty Awarded TRI Pilot Grants in 2023

TRI awarded pilot grants up to \$25,000 each to three UAMS researchers in 2023.

The one-year awards, with a focus on addressing health issues in rural and underserved populations, went to projects led by researchers in the College of Medicine and College of Nursing. The awardees and their project titles are:

Jonathan Bona, Ph.D., assistant professor, College of Medicine Department of Biomedical Informatics

"Accelerating Insights with an Open Drug Information Toolkit (ADROIT)," which aims to create and evaluate a novel software tool designed to provide non-informaticists with easy access to drug information.



Laura Hays, Ph.D., APRN, assistant professor, College of Nursing Department of Nursing Practice

"Arkansas – Making History," which is addressing the lack of genetic risk assessment services among rural Arkansas providers.



Mario Schoutman, Ph.D., professor, vice chair of Mentorship and Innovation, Institute for Community Health Innovation, Department of Internal Medicine, College of Medicine; and co-director, TRI Translational Workforce Development; and associate director, TRI KL2 Mentored Research Career Development Scholar Awards Program.

"Assessing the Quality of the Linked Arkansas Cancer Registry and Arkansas All-Payer Claims Database Data," which aims to generate preliminary data for an NIH R01 application focused on identifying reasons for elevated mortality in colorectal cancer patients in persistent poverty areas.



Meals not Pills

NIH-FUNDED STUDY AIMS TO SHOW IMPACT OF FOOD ACCESS ON SCHOOL BEHAVIORAL ISSUES

Could children starting the day with a good breakfast help reduce behavioral problems in schools? What about diagnoses of mental health disorders such as attention deficit hyperactivity disorder (ADHD) and oppositional defiance disorder?

Definitive answers could come from a novel three-year study led by UAMS' Michael Thomsen, Ph.D., who is leveraging unique health and school data with support from a three-year \$1.2 million NIH National Institute of Mental Health (NIMH) grant awarded in 2023.

"If our central hypothesis holds true — that better access to school meals reduces the burden of behavioral disorders — there will be profound implications on school meal policies," said Thomsen, a professor in the Fay W. Boozman College of Public Health Department of Health Policy and Management. "Our focus is to help improve mental health outcomes in children. A young person who struggles with concentration or behavior because of food insecurity may be referred for mental health screenings when what they really need is better nutrition."

Thomsen is the Governor Sidney S. McMath Chair in Obesity Prevention and director of the Center for the Study of Obesity. His research has been supported by a \$50,000 TRI pilot award in 2022, and he has received TRI research support on another grant he received in 2023 from the NIH National Institute on Minority Health and Health Disparities (NIMHD). That study, known as the Green Schoolyard Study,

involves a collaboration with the Little Rock School District and city of Little Rock.

He learned about the 2023 NIMH opportunity while preparing the application for the TRI pilot award. The pilot, while more focused on childhood obesity, became crucial in securing the federal grant.

"We wouldn't have been ready to apply for the NIMH grant if we were not already gearing up for the TRI project," he said.

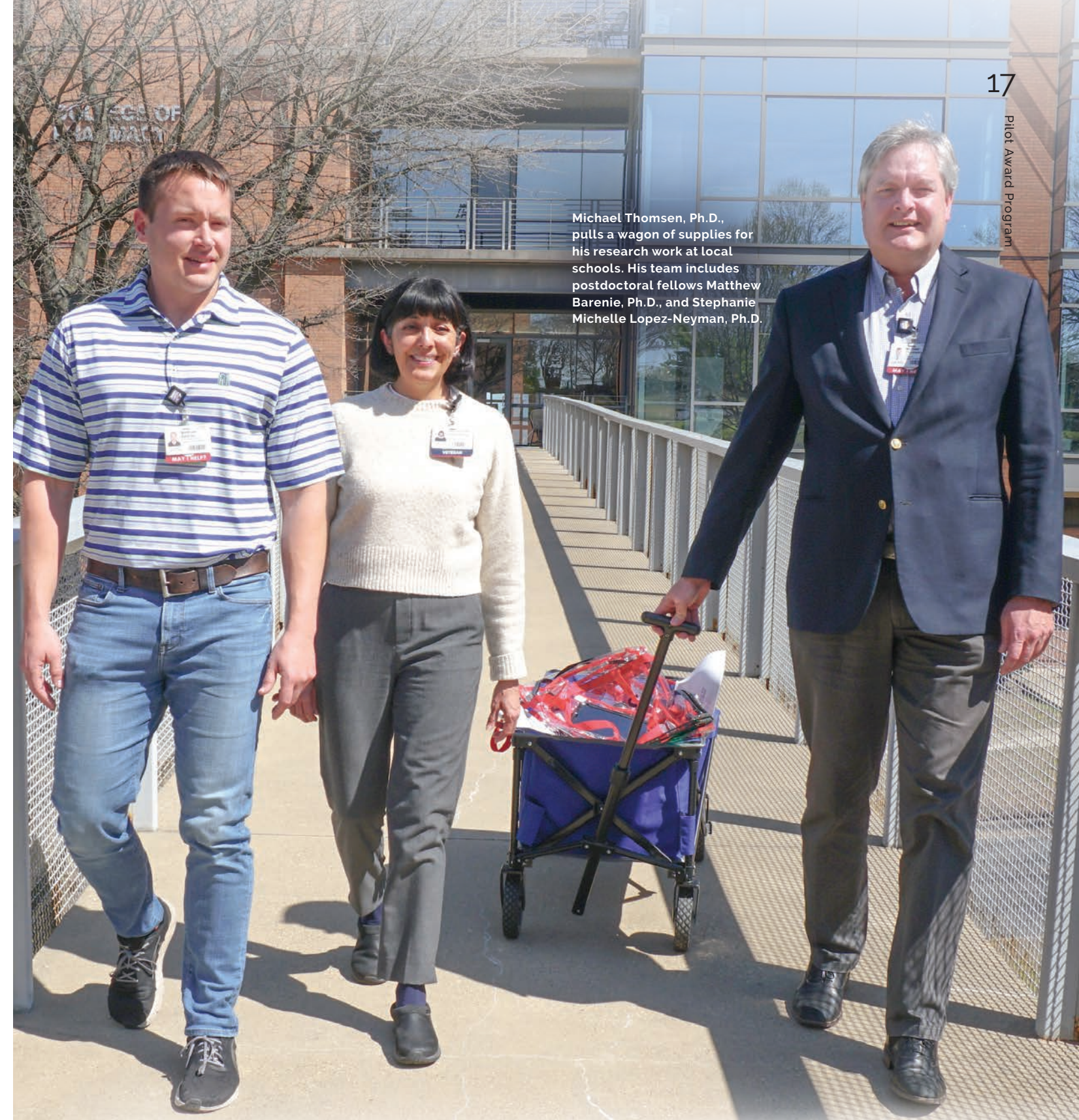
**"If our central hypothesis holds true — that better access to school meals reduces the burden of behavioral disorders — there will be profound implications on school meal policies."
— Michael Thomsen, Ph.D.**

Arkansas ranks second in the United States for the percentage of children diagnosed with ADHD and second in the incidence of childhood food insecurity. Arkansas also has a large medically underserved rural population that encompasses much of the Mississippi Delta.

The NIMH data-focused study is looking at whether diagnoses or health care use is impacted when schools provide universal free meals and/or make breakfast available after classes begin (breakfast after the bell).

The UAMS Arkansas Center for Health Improvement (ACHI) is a collaborator on the grant and has been instrumental in facilitating access to the administrative datasets needed to do the work.

"We're uniquely positioned to answer questions about school meals and health in Arkansas because of our partnership with ACHI and its investments in statewide data analytics capabilities," Thomsen said. "What we're doing is something that can teach the entire nation about school meals. Childhood behavioral disorders are a problem that resonates nationally."



Michael Thomsen, Ph.D., pulls a wagon of supplies for his research work at local schools. His team includes postdoctoral fellows Matthew Barenie, Ph.D., and Stephanie Michelle Lopez-Neyman, Ph.D.

Arkansas ranks second in the United States
for the percentage of children diagnosed with ADHD and
second in the incidence of childhood food insecurity.

Over 57% of incarcerated women experience physical health problems, including arthritis, asthma, hypertension, hepatitis, dental issues, speech impairments, hearing loss, visual impairment and mobility constraints. In addition, 64-81% of incarcerated women meet criteria for at least one lifetime mental illness.

Community-Driven Research

TRI TRAINING, SUPPORT HELPS INVESTIGATORS SECURE PCORI FUNDING

A TRI program helped launch a UAMS academic-community partnership that secured a \$250,000 award from the national Patient-Centered Outcomes Research Institute (PCORI) to address health disparities among women involved in the criminal legal system.



Melissa Zielinski, Ph.D., and members of her UAMS team say the successful PCORI application in 2023 is a credit to the knowledge they gained as participants in TRI's Community-Based Participatory Research (CBPR) Scholars Program and from other TRI services.

"TRI has phenomenal community engagement resources that informed this project," said Zielinski, an associate professor and director of the Health and the Legal System (HEALS) Lab in the College of Medicine Department of Psychiatry & Behavioral Sciences. "In community-based research it is vital to have people at the table who are affected by the issues you're studying, and TRI taught us how to make that happen."

The CBPR Scholars Program is managed by TRI's Community Engagement team, which is directed by Tiffany Haynes, Ph.D.

The two-year Eugene Washington Community Engagement Award from PCORI has enabled the team to establish an alliance of individuals and organizations that are invested in justice-involved women's health. They are now working to expand the alliance's capacity to conduct patient-centered outcomes research, including identifying community-driven research questions to prioritize in future studies.

April Bachrodt, Ph.D., LCSW, at Magdalene Serenity House in Fayetteville, which serves women who have experienced trauma, addiction and incarceration, is the PCORI project's lead community partner.

"We're not just assuming we know the questions or we know the priorities," Bachrodt said. "We are bringing these stakeholders to the table and that is going to have the biggest impact for our future work."

OTHER PROJECT TEAM MEMBERS ARE:

Katy Allison, Ph.D., MPH, CHES, research assistant professor in the Fay W. Boozman College of Public Health Department of Health Behavior & Health Education. She is also a TRI KL2 Mentored Research Career Development Program scholar.



Sophia Dugwyler, a certified peer recovery specialist who has experienced addiction, incarceration and recovery.



Mollee Steely Smith, Ph.D., assistant professor of psychiatry and faculty in Zielinski's HEALS Lab.



Significant Health Disparities

Women entangled in the justice system experience complex, chronic physical and mental health conditions that are exacerbated by incarceration and often go unaddressed after they are released. Over 57% of incarcerated women experience physical health problems, including arthritis, asthma, hypertension, hepatitis, dental issues, speech impairments, hearing loss, visual impairment and mobility constraints.

In addition, 64-81% of incarcerated women meet criteria for at least one lifetime mental illness, with 46-70% meeting criteria for at least one current mental illness.

Dugwyler also noted that there are disparities in health and treatment services to help such women depending on where they live. Rural women have less access to services, and the quality varies statewide.

SIX TEAMS GRADUATE FROM TRI COMMUNITY-BASED PARTICIPATORY RESEARCH (CBPR) SCHOLARS PROGRAM

In February, six teams of UAMS researchers and their community partners successfully completed TRI's Community-Based Participatory Research (CBPR) Scholars Program.

The CBPR program involves collaboration between academic researchers and community-based organizations to address health disparities and promote community health and well-being. CBPR emphasizes the importance of engaging communities in all stages of the research process, from identifying research questions to interpreting results and implementing interventions. This approach aims to ensure that research is relevant to the needs and priorities of the communities being studied, and that research findings are effectively translated into real-world impact and interventions. The CBPR program offers training, support and resources to facilitate the research partnerships. After graduating, teams may be invited to apply for a TRI pilot grant, or they may wish to apply for other grants.

The six graduating teams are:

Team 1

- Academic principal investigator (PI): Alexandra Marshall, Ph.D., MPH, associate professor, Fay W. Boozman College of Public Health, Department of Health Behavior and Health Education
- Community Organization: Engaging Arkansas Communities
- Community Leaders: Bobby Pierce, Jeff Walker, Whitley Hopkins and Danny Harris

Team 2

- Academic PI: Jaimi "Mimi" Allen, Ph.D., instructor, College of Public Health, Office of Research; Ben Amick, Ph.D., professor of epidemiology and associate dean for Research, College of Public Health
- Community Organization: Arkansas Cancer Coalition
- Community Leaders: Trena Mitchell, Miriam Karanja and Wonder Lowe

Team 3

- Academic PI: Tiffany Miles, Ph.D., post-doctoral fellow, College of Medicine Department of Neurobiology and Developmental Science
- Community Organization: Boys Girls Adults Community Development Center, Marvell
- Community Leaders: Shakina Gates, Natasha Brown and Dorothy Love

Team 4

- Academic PI: Pearman Parker, Ph.D., MPH, RN, assistant professor, College of Nursing Research
- Community Organization: The National Witness Project
- Community Leader: Dee Johnson

Team 5

- Academic PI: Tracie Harrison, Ph.D., RN, professor, UAMS College of Nursing Research; succeeded by Keneshia Bryant-Moore, Ph.D., APRN, professor, College of Public Health
- Community Organizations: Difference Makers of Hot Springs and Diamonds in the Rough
- Community Leaders: Rev. Willie Wade, Difference Makers; and Esther Dixon, Diamonds in the Rough

Team 6

- Academic PI: Suzanne Dhall, Dr.PH., College of Medicine Department of Neurology
- Community Organization: Giving Others Ambition Together (G.O.A.T.)
- Community Leader: Kelvin Parker

The February graduation of the Community-Based Participatory Research Scholars Program included (l-r): TRI Community Engagement Program Director Tiffany Haynes, Ph.D., and Nicki Spencer, MHA (front), senior program manager, with Alexandra Marshall, Ph.D., MPH, Jaimi "Mimi" Allen, Ph.D., Ben Amick, Ph.D., Natasha Brown, Anna Huff Davis, Wonder Love, Tiffany Miles, Ph.D., Esther Dixon, Miriam Karanja, Trena Mitchell, Willie Wade and Pearman Parker, Ph.D., MPH.



Community Partners Honored at Annual TRI Celebration



TRI Community Engagement Program Director Tiffany Haynes, Ph.D., addresses attendees of the December 2023 Community Partner Celebration.



Nakita Lovelady, Ph.D. (center), received the M. Kate Stewart Community Engaged Researcher of the Year Award from TRI Executive Director Christi Madden, MPA (left), and Keneshia Bryant-Moore, Ph.D., APRN.

TRI recognized some of UAMS' many community partners at the 2023 Community Partner Celebration in December. The dinner and awards ceremony drew 78 community partners, researchers and research staff who are working together to tackle health-related issues in diverse communities across Arkansas.

For Joyce Raynor, winning the UAMS Chancellor's Community Engaged Research Partner of the Year Award affirmed many years of hard work.

"This award means that we're on the right track," said Raynor, founder and executive director of the Center for Healing Hearts & Spirits, which helps victims of violence. "It means that our partnership with UAMS is working, and it's good."

In addition to Raynor's organization, the award winners were:

- Community Engaged Student/ Trainee of the Year: Alice Gardner, a health promotion and prevention research doctoral student in the UAMS Fay W. Boozman College of Public Health.
 - Community Advisory Board of the Year Award: Arkansas Community Engagement Alliance (CEAL) Coalition
 - Community Engaged Research Staff Member of the Year: Elizabeth Taylor, College of Public Health
 - M. Kate Stewart Community Engaged Researcher of the Year: Nakita Lovelady, Ph.D., assistant professor, College of Public Health
- Raynor founded the Center for Healing Hearts & Spirits in Little Rock after her son was killed by gun violence in 2001. The center has worked with UAMS on multiple research and service

projects, including with Lovelady, who nominated Raynor for the award.

"The Center for Healing Hearts & Spirits works closely with frontline workers to connect violent assault survivors with critical social services to optimize recovery and prevent subsequent violence," Lovelady said.

"Dr. Lovelady truly understands the factors that contribute to community violence in Arkansas' most high-risk populations, and she works very hard to find innovative solutions to address those issues and meet people where they are."

— Joyce Raynor



"The center provides a range of victim services to violent assault survivors enrolled in the studies. Joyce has an intricate understanding of the issue of violence and survivorship."

Lovelady, a KL2 Mentored Research Career Development Award Scholar, received the inaugural M. Kate Stewart Community Engaged Researcher of the Year Award. She and her mentor, Nickolas Zaller, Ph.D., received a \$1.4 million grant in 2023 from the NIH to support a community-engaged violence prevention program.

"Dr. Lovelady truly understands the factors that contribute to community violence in Arkansas' most high-risk populations, and she works very hard to find innovative solutions to address those issues and meet people where they are," said Raynor, who nominated Lovelady for the inaugural award honoring Stewart, who retired in 2023 as director of TRI's Community Engagement Program.

Stewart joined the College of Public Health when it was founded in 2001 and led TRI's Community Engagement Program since it was established in 2009. She created and oversaw numerous innovative programs that have elevated the status of community-engaged research in Arkansas and across the United States.

TRI Community Engagement Program Numbers Tell the Story (2019-2023)

Assisted in receipt of over **\$130M in external funding** with 49 subcontracts to community organizations

Held **55 Community Review Boards** to advise on individual research projects

Provided **90 consultations** to researchers on community-based research

Trained **28 community grant reviewers** for TRI pilot award reviews

Trained **56 community organization leaders and academic researchers** representing 13 teams in the Community-Based Participatory Research (CBPR) Scholars Program

Trained **35 leaders from 15 organizations** in Community Partners Educated as Arkansas Research Leaders (CPEARL) Program.

Trained **187 participants in the Community Scientist Academy**

Trained **33 faith leaders** across Arkansas through the TRI-supported FAITH Network Research Advocate Training Program

Stepping Up

NEW CAREER LADDER REFLECTS VALUE OF COMMUNITY HEALTH WORKERS

In a December 2023 presentation, UAMS' Pearl McElfish, Ph.D., MBA, recalled an employee telling her how much she had struggled on a community health worker's salary. She explained that she loved her job but that she was not able to afford rent, forcing her to live in her car at times.

Then the employee discussed her experience after she completed UAMS' community health worker (CHW) training program, became certified and received a promotion, thanks to a new career ladder program implemented in 2023 by Krista Langston, MBA, McElfish, and their team.

McElfish directs the UAMS Institute for Community Health Innovation (ICHI), which on March 1, 2024, replaced the UAMS Office of Community Health & Research, and she co-directs the TRI-supported UAMS Rural Research

Network. Langston is executive director of Community Programs at ICHI.

When the new career ladder titles were implemented, the employee was promoted to a Community Health Worker Level 2, which increased her salary by about 36%.

"As much as community health workers help Arkansans, they are often paid poverty wages," McElfish said. "I'm excited we've been able to move community health workers into a livable wage with a career ladder. Of all the things that Krista and I have done, this may be the initiative that has the most impact."

The minimum annual salary as part of the career ladder program was increased from about \$32,000 to \$44,500 for level 1, from \$40,000 to

\$50,000 for level 2, and from \$48,000 to \$57,500 for level 3.

The Arkansas Community Health Worker Association (ARCHWA) sets the standards for the CHW certification process and approves curriculum. Three organizations offer approved CHW core competency training: UAMS, Tri County Rural Health Network and the Arkansas Rural Health Partnership.

Unique Value

CHWs serve a variety of roles, including health education, preventive care and health care navigation, such as assistance applying for insurance and Medicaid. They bring unique value to their jobs as trusted members of the communities they serve.

"CHWs have community relationships already established," said Anna Huff Davis, who chairs the ARCHWA Board of Directors and TRI Community Advisory Board. "Health care providers and research leaders have come to realize how valuable CHWs are."

The ICHI established the Community Health Worker Training & Apprenticeship Program in 2023 to train and engage CHWs in underserved communities across Arkansas. A federal Health Resources and Services Administration grant led by Langston supports implementation of the career ladder and funds the community health workers' time as they go through the training and seek certification.

UAMS community health workers in Northwest Arkansas gathered in August 2023 to celebrate National Community Health Worker Awareness Week.



Over the past two years, UAMS has trained and deployed **158 community health workers (CHW)** into 40 of Arkansas' 75 counties, and 76 organizations supported and provided training for the integration of CHWs.

The minimum annual salary as part of the career ladder program was increased from about **\$32,000 to \$44,500 for level 1, from \$40,000 to \$50,000 for level 2, and from \$48,000 to \$57,500 for level 3.**

"We're very excited about this," McElfish said, noting that CHWs are trained to work on teams using community-based participatory research approaches to support and educate the community.

"Of all the things that Krista [Langston] and I have done, this may be the initiative that has the most impact."

— Pearl McElfish, Ph.D., MBA

College Credit

Langston and McElfish further enhanced the training program by partnering with the University of Arkansas Community College at Hope-Texarkana to offer college credit for those who complete the UAMS training.

"Our hope is that many community health workers continue their work, while others have a path to additional higher education and become nurses or serve in other critical roles to address health disparities across the state," McElfish said.

McElfish, who presented on the career ladder initiative to the TRI External Advisory Board in December, said the achievements are a credit to the significant collaborations with TRI Community Engagement Core

Director Tiffany Haynes, Ph.D., Davis, ARCHWA and the Tri County Rural Health Network.

Over the past two years, UAMS has trained and deployed 158 CHWs into 40 of Arkansas' 75 counties, and 76 organizations supported and provided training for the integration of CHWs.

"We have secured and provided funding for every one of those community health workers and embedded them in community-based organizations," McElfish said.

Seeing the Light

The COVID-19 pandemic brought health providers and researchers numerous opportunities for grants that supported hiring community health workers. As that money has dwindled, provider organizations are finding ways to keep them on the payroll, Davis said.

"They saw the light," she said. "They get the best impact when community health workers are incorporated into what they are doing."

The number of CHWs in Arkansas increased from 128 in 2013 to 414 in 2023, based on employer surveys conducted by ARCHWA. The numbers are likely underreported because not all the surveys were returned, said Judy Pile, Ed.D., ARCHWA executive director.

More than 350 of the state's community health workers are affiliated with UAMS.

TRI Support

TRI's support for ARCHWA's mission includes adapting its nationally recognized Community Scientist Academy for community health workers.

Pile praised TRI's efforts to expand the role of community health workers into research.

"ARCHWA has enjoyed a great relationship with TRI researchers for many years," Pile said.

Davis said the TRI Community Scientist Academy has been an enlightening experience for community health workers and a great benefit to UAMS research.

Because of their lived experiences, community health workers are ideal for participating on TRI Community Review Boards, which are one-time meetings to provide feedback on a researcher's project. They can also represent their communities as reviewers of grant proposals and collect data on community-based research studies.

Future TRI efforts will include developing strategies to teach investigators how to work with CHWs and developing opportunities for investigator-CHW partnerships so that CHWs are further integrated into TRI-supported research.



Krista Langston, MBA



Tiffany Haynes, Ph.D.



Anna Huff Davis



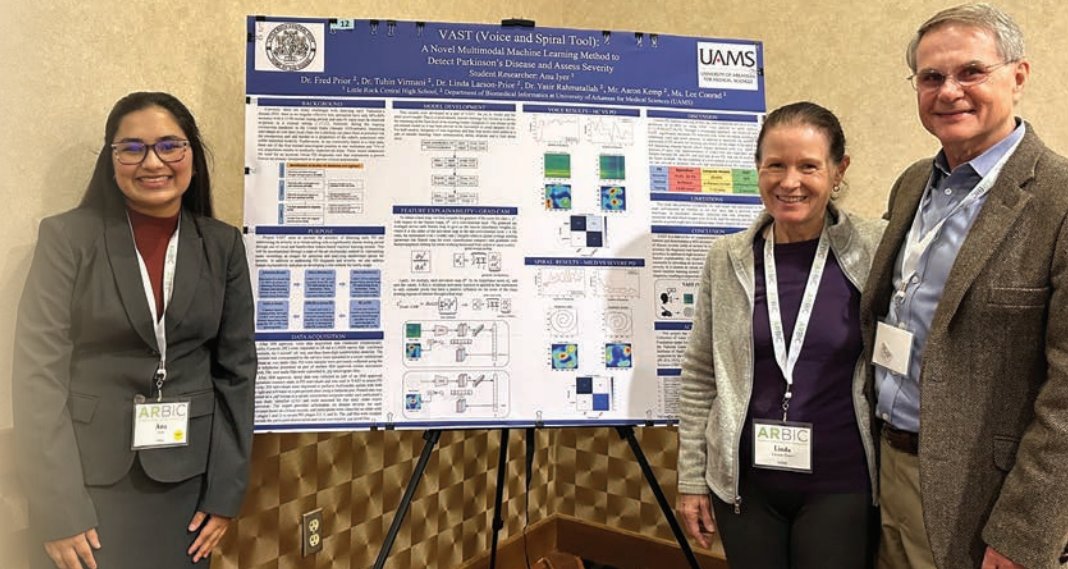
Pearl McElfish, Ph.D., MBA



Judy Pile, Ed.D.

Anu Iyer (left) with her mentor and co-investigator Fred Prior, Ph.D., and co-investigator Linda Larson-Prior, Ph.D., at the Arkansas Bioinformatics Consortium (AR-BIC) meeting in March 2023. The poster describes the machine learning method Iyer and the UAMS research team developed to detect Parkinson's disease.

Published in the journal *Scientific Reports*, the study confirmed the team's machine-learning model can detect Parkinson's disease with 97% accuracy using telephone voice recordings.



Parkinson's Advance

TEENAGER LEADS STUDY THAT COULD TRANSFORM EARLY DETECTION

Anu Iyer, 19, a machine learning prodigy invited to join a TRI-supported Parkinson's disease research team, became the lead author on a December 2023 publication in *Scientific Reports*, part of the Nature portfolio journals.

She was joined as co-first author by UAMS' Aaron Kemp, MBA, a Ph.D. student in the College of Medicine Department of Biomedical Informatics.

The publication stems from Iyer's work with Kemp and other UAMS researchers using machine learning to detect Parkinson's disease on a project supported by a TRI Team Science Champion Award. Their machine-learning model can detect Parkinson's disease with 97% accuracy using telephone voice recordings.

Now a student at Georgia Tech, Iyer has been mentored since high school by UAMS' Fred Prior, Ph.D., distinguished professor and chair of the Department of Biomedical Informatics. After seeing her work, he knew in 2022 that the then-high school student would be an ideal fit for the research team led by UAMS neurologist Tuhin Virmani, M.D., Ph.D., which was testing digital health innovations that may benefit rural

patients with movement disorders such as Parkinson's disease.

"Anu is exceptionally talented, and we are proud that she is part of our team," said Prior, also director of TRI's Comprehensive Informatics Research Core. "Her work demonstrates the immense potential of machine learning and artificial intelligence for advancing medical diagnoses and treatment."

Virmani directs the UAMS Movement Disorders Clinic and the Huntington's Disease Society of America Center of Excellence at UAMS.

The UAMS study team collected telephone voice samples from 50 people diagnosed with Parkinson's and 50 healthy control participants, then applied machine learning classification with voice features related to phonation.

"We show the superiority of our deep learning model for the task of classifying people with Parkinson's disease as distinct from healthy controls," the paper concludes.

Iyer meets via Zoom with the UAMS team each Saturday. "I plan to continue working with UAMS and Dr. Prior and

Dr. Virmani's team, specifically with applying bioinformatics approaches to Parkinson's," she said.

In addition to Kemp, Prior and Virmani, the paper's co-authors are:

- Aliyah Glover, research technician
- Lakshmi Pillai, M.S., research program manager, College of Medicine Department of Neurology
- Linda Larson-Prior, Ph.D., professor, College of Medicine Department of Neurobiology and Developmental Sciences and Department of Psychiatry
- Yasir Rahmatallah, Ph.D., assistant professor, Department of Biomedical Informatics

Rahmatallah also secured additional grants to support work on the project. These include a National Science Foundation EPSCoR grant (OIA-1946391) of \$100,919 administered through the Data Analytics that are Robust and Trusted (DART) program; and a \$25,000 Barton Intramural Grant from the UAMS College of Medicine.

NEW INFORMATICS RESOURCE AIMS TO EXPAND LIFESPAN RESEARCH IN ARKANSAS

The inaugural Advancing Arkansas Lifespan Research Conference in September 2023 introduced an exciting new data integration system called ARLife that will deliver new opportunities in lifespan research for UAMS-affiliated researchers.

The system was presented by Fred Prior, Ph.D., one of the three keynote speakers at the conference.

For the first time, ARLife makes it possible to link and harmonize electronic health records data from UAMS, Arkansas Children's Hospital, and the UAMS Arkansas Center for Health Improvement, which maintains the Arkansas All-Payer Claims Database.

"ARLife is the first baby step toward building an informatics and data management resource that allows us to really do lifespan research effectively here in Arkansas – to be able to track Arkansas patients across their lifespan," said Prior, distinguished professor and chair of the College of Medicine Department of Biomedical Informatics. He is also director of TRI's Comprehensive Informatics Resource Core.

Prior and his team have expertise in data integration having led development of similar tools and processes nationally and internationally.

"We're using what we've learned to crosslink databases in a privacy-preserving way," he said.

The Advancing Arkansas Lifespan Research Conference was sponsored by TRI, Arkansas Children's Research Institute

(ACRI), and the Lifespan Cardiometabolic Health Creativity Hub in the College of Medicine. Lifespan research is a key part of ACRI's strategic plan and is a strong component of TRI's plans for the next seven years. It is also advocated by the NIH and its National Center for Advancing Translational Sciences (NCATS) to strategically promote health and combat diseases as individuals progress across the lifespan.

In addition to Prior, other keynote speakers at the conference were Rosalind Wright, M.D., MPH, dean for Translational Biomedical Sciences and principal investigator for the Institute for Clinical and Translational Sciences at the Icahn School of Medicine; and Amanda Dettmer, Ph.D., a research scientist at the Child Study Center, Yale School of Medicine.

Elisabet Børsheim, Ph.D., Laura James, M.D., and Peter Mourani, M.D., served as the event's moderators. Borsheim, a professor in the College of Medicine departments of Pediatrics and Geriatrics, leads the Cardiometabolic Health Creativity Hub. Mourani is president of ACRI and senior vice president and chief research officer for Arkansas Children's. James is TRI director and UAMS associate vice chancellor for Clinical and Translational Research.

"ARLife is the first baby step toward building an informatics and data management resource that allows us to really do lifespan research effectively here in Arkansas – to be able to track Arkansas patients across their lifespan."

— Fred Prior, Ph.D.



Rosalind Wright, M.D., MPH, speaks during a panel discussion with (l-r) Elisabet Børsheim, Ph.D., (standing), Amanda Dettmer, Ph.D., and Fred Prior, Ph.D.

Confidence Booster

SIMULATION TRAINING HELPS PARENTS WITH CHILDREN ON HOME VENTILATORS

Amit Agarwal, M.D., devoted two years to implementing a potentially life-saving practice for infants and young children on long-term mechanical ventilation.

"My passion is small babies," he said, explaining the inspiration for his participation in the TRI Implementation Science Scholars Program, which provided protected time to work on his project.

Agarwal is a UAMS associate professor in the Department of Pediatrics, Division of Pulmonary and Sleep Medicine based at Arkansas Children's Hospital (ACH).

The 2023 graduate of the Implementation Science Scholars program led development of new processes that help parents more confidently manage their children's ventilation issues after they moved from the hospital to their homes. The most impactful piece of his project is simulation training for parents using an interactive child manikin.

Prior to implementing his project, Agarwal saw that parents were struggling despite the ventilator training provided by the hospital. He found that about 60-70% of parents brought their child to the emergency department one or more times within 10 days of their first hospital discharge.

Long-term ventilation, which may last two or more years, is required primarily for some premature infants and young children with chronic lung diseases, neuromuscular disorders and severe infections.

Ventilator system incidents, such as a blocked tracheostomy tube, are not uncommon. Parents must troubleshoot as monitoring equipment alarms sound, and their child will likely be waving their arms and may even turn blue, he said.

About 20% of deaths are due to preventable tracheostomy tube accidents, and 30% of tracheostomy

hospital admissions are for tracheostomy-related adverse events.

"A lot of times it's just a matter of changing out the tube, but you have to do it quickly and efficiently," Agarwal said.

His project involved a multidisciplinary approach to standardize the process of transitioning patient families from care at the hospital to their homes.

Interviews with parents led to teaching them with an interactive manikin in simulated emergency scenarios. Many caregivers overestimate their ability to handle emergencies and gain important insight through simulation, he said.

Traditionally, medical staff would use a doll to show parents how to manage various situations.

Agarwal tracked five families as they went through the new simulation training and moved to home-based care. Many initially failed the simulated scenarios, but they practiced until they developed their skills and confidence.

"I have met the families one or two months after discharge and they told me, 'Oh, yes, emergencies happened, and we actually did well,'" he said.

Only one of the five patient families returned to the hospital within 30 days due to a mishap, Agarwal said.

The new model has been implemented in the neonatal intensive care unit (NICU), and he hopes to see it implemented in the pediatric ICU and cardiovascular ICU at ACH.

His experience in the Implementation Science Scholars Program has given him valuable skills that he can apply to future projects, Agarwal said, adding that his mentor Geoffrey Curran, Ph.D., director of the program and director of the UAMS Center for Implementation Research, was especially supportive.

"The program was very, very helpful," he said. "We've had great teamwork, and I have learned a great deal from everybody involved. I would highly recommend the scholars program for other clinicians."

"We've had great teamwork and I have learned a great deal from everybody involved. I would highly recommend the scholars program for other clinicians."

— Amit Agarwal, M.D.

Amit Agarwal, M.D., gave an oral presentation about his work at TRI Research Day.

About 20% of deaths are due to preventable tracheostomy tube accidents, and 30% of tracheostomy hospital admissions are for tracheostomy-related adverse events.



Simulated emergencies with an interactive child manikin help parents gain confidence.

COMING TOGETHER

MEETING SPARKS COLLABORATION AMONG RURAL CTSA EVALUATORS



Jessica Presley, MPP (left), with members of her TRI evaluation team, Shani Worrell, Ed.D., and Alex Jauregui-Dusseau, DH.Sc.

A two-day, in-person meeting of eight rural-state CTSA in October 2023 turned out to be especially fruitful for Jessica Presley, MPP, TRI senior director of evaluation.

In fact, the connections she made with the other CTSA evaluators at the Consortium of Rural States (CORES) annual meeting have resulted in recurring monthly meetings, robust resource and information sharing, and a significant collaborative project.

Presley attended the CORES meeting with Laura James, M.D., TRI director, Pearl McElfish, Ph.D., MBA, TRI director of Integrating Special Populations, founding director of the UAMS Institute for Community Health Innovation, and co-director of the UAMS Rural Research Network, and Paul Duguid, MPH, TRI director of Research Programs.

With more than 10 years of experience as a program evaluator, Presley said her three years as TRI's senior director of evaluation have presented exciting new challenges that should benefit from collaboration with other rural-state CTSA evaluators.

"Sometimes it feels like you're on an island doing this work," she said. "There aren't a lot of evaluators in Arkansas, so it's great to have this collaboration with our CORES institutions."

In her evaluation of nearly two dozen TRI programs and initiatives,

her work includes determining how effective they are at:

- Preparing a diverse group of early career researchers to become independently funded researchers, implementation scientists, entrepreneurs and mentors
- Establishing and expanding community-based research that involves partnerships between UAMS-affiliated faculty and community-based organizations
- Expanding research and programs that benefit the health of rural populations

"The TRI's scope is expansive and wide-ranging, so evaluation of the TRI is multi-faceted and can be challenging," Presley said. Her fellow evaluators are in the same boat, which has inspired a strong spirit of collaboration.

"We are coming together and learning from each other and collaborating on approaches to address the unique challenges rural-state CTSA face," said Presley, who is pursuing a PhD in interdisciplinary evaluation.

The evaluators have set up a repository for sharing numerous resources, she said, including some of the survey instruments they are using.

"It's just so nice not having to reinvent the wheel," she said.

Presley noted that TRI's External Advisory Board lauded TRI's rural

research efforts but wanted to know how TRI was measuring impact in rural communities. She learned that TRI wasn't the only CTSA struggling with the question.

"There aren't a lot of evaluators in Arkansas, so it's great to have this collaboration with our CORES institutions."

— Jessica Presley, MPP

"We realized that it's been a challenge for all of us as evaluators," she said.

In response, the CORES evaluators are developing a study that will first map out all of the activities that the individual institutions are doing within rural populations and determine the health and social benefits that resulted from their projects.

"We'll be comparing and contrasting and doing a deep dive to see what conclusions we can draw from our rural research efforts," Presley said. "For example, can we develop some best practices based on what we learn to help us broaden impact within our rural communities?"

Principled and Playful

Trey Spencer



Continued from page 29

Before his unexpected death at age 62, Horace J. "Trey" Spencer III, M.S., spent nearly three decades building friendships and earning the respect of his colleagues at UAMS. Researchers and his fellow biostatisticians recalled fondly his expertise, dedication and sense of humor.



Mayumi Nakagawa, M.D., Ph.D., counts herself fortunate to have had Spencer as her biostatistician for 15 years. She remembers him as "kind, principled and really good at what he did."

He was adamant about preserving the integrity of her studies, guarding against anything that could jeopardize randomization, blinding or anything else, she said.

A professor of pathology who is pioneering a therapeutic vaccine for patients with cervical dysplasia or precancer, Nakagawa credits Spencer for helping secure three cycles of NIH funding.

"The NIH reviewers would always comment on the high quality of the biostatistics support, so Trey's expertise was really critical," said Nakagawa, who is leading multiple clinical trials of her two investigational vaccines.



Mark S. Smeltzer, Ph.D. remembers Spencer as "a true friend and valued colleague" and "the only one that could make my statistically-challenged-self understand what he was doing and why."

"On the rare occasion when I just didn't get it, I'd ask Trey if it was possible that anyone could challenge the scientific rigor of his analysis. When

he said 'no,' I was done. And by the way, no one ever did challenge it."

Smeltzer, who worked closely with Spencer for 15 years, is a professor and the Endowed Chair in Sciences Basic to Medicine, and director of the Center for Microbial Pathogenesis and Host Inflammatory Responses.

"He was the only statistician I ever worked with who used the phrase 'fails the eye test,' with that characteristic little grin," Smeltzer said.

Reid Landes, Ph.D., a professor in the Department of Biostatistics, became friends with Spencer and treasures the memories, including adventures outside of work.

"He was an excellent statistician, and he knew a lot about a lot," Landes said, noting that although Spencer didn't have a Ph.D., his expertise was highly regarded among the faculty. His door was always open for consulting — or a good joke — with anyone in the department.

Spencer's obituary describes him as a life-long practical joker. Even at work, his playful nature shone through.

"He made work more fun — or funny," Landes said. Sometimes he would stop by Spencer's office with a work-related question, and Spencer would turn and call out, "Hey Google!" pretending that his essential oil diffuser was a Google Tower.

Landes said Spencer once figured out how to alter his own photo on the department's website. If someone moused over it, his short-cropped hair would become black and curly, and a large black beard would appear on his otherwise clean-shaven face.

"His jokes were always PG, and it was great to summon our 12-year-old selves and laugh at things 12-year-old boys find funny. But he also had plenty of solid advice about dealing with husband and father things."

A former marine, Spencer once ran a trail half-marathon with Landes and in more recent years volunteered as his crew on Landes' 100-mile ultra-marathons.

"He was always up for an adventure," Landes said.



Paula Roberson, Ph.D., professor and chair of the Department of Biostatistics, said it is tough to sum up just how much Spencer meant to UAMS' research community.

"Not only was he an excellent statistician but he was also a valued colleague for members of our department and his many collaborators," said Roberson, who has served as chair since 2004. "Among the things I will remember are his continuing quest for new knowledge, his wide-ranging interests both professionally and personally, his willingness to take on new tasks and to be a sounding board for others, and his warmth and sense of humor, which contributed immensely to the collegiality within our department."

"Our department and the entire research community at UAMS are all beneficiaries of his legacy."



By Laura James, M.D.

TREY SPENCER, AN EXEMPLAR OF TEAM SCIENCE

Horace J. "Trey" Spencer III, M.S., a mainstay in the UAMS Department of Biostatistics, died Dec. 10, 2023. This news was a shock to numerous research faculty and staff who worked closely with him during his 27 years as a key member of multiple research teams. Trey provided state-of-the-art expertise on statistical approaches and analysis plans, and he was a valued contributor to TRI.

I can't remember our first interaction, but my impression of Trey was always one of a scientist who was extremely professional, cared deeply about his work and contributed fully to the research study at hand, regardless of the significance of the research question or the prior research achievements of the team. He worked with thousands of investigators during his career at UAMS. He was particularly adept at working with junior faculty members who were building their research programs and needed on-the-job training in statistics and study design.

Several weeks after his death, I attended a gathering in Trey's honor. I was braced for tears and awkward silences, but this "memories with Trey" event defied my expectations. I listened with growing interest as colleague after colleague told of Trey's sense of humor, his tendency to play tricks on others that smacked of junior high school humor, yet undoubtably created an engaging environment for his work team. Laughter filled the room on multiple occasions. His colleagues, several of whom had more academic degrees than Trey, recalled instances where they sought his advice, benefitting from his academic curiosity and deep wealth of knowledge. I recalled a time when Trey

patiently explained to me and several junior faculty members that our suppositions about our research study were false and that the study results did not support the study hypothesis. He communicated the message patiently, repeatedly, and with grace.

As I lead TRI to ensure that our program aligns with the newest directives of our funding agency, I find that "team science" is the term that best describes a foundational concept for clinical and translational research. It's a concept that Trey understood and embraced long before team science became a "buzz word" for federal funding agencies and infiltrated current funding announcements.

Translational research seeks to push biomedical discoveries along the research developmental continuum to benefit the health needs of individuals and communities. Team science engages multiple experts across disciplines, training and perspectives to provide expertise to research that ensures it is sound and has impact. Scientific innovation requires team science, as does the development of research that seeks to advance the health of communities with great health needs. At times, team science can be challenging as it prioritizes the contributions of the team members (as opposed to the single investigator approach) and navigates varied perspectives and opinions to ensure the research achieves its goal.

Trey fully recognized the value of team science and effectively shared his expertise with numerous successful research teams. His contributions to the UAMS research community will continue well beyond his time in our midst.

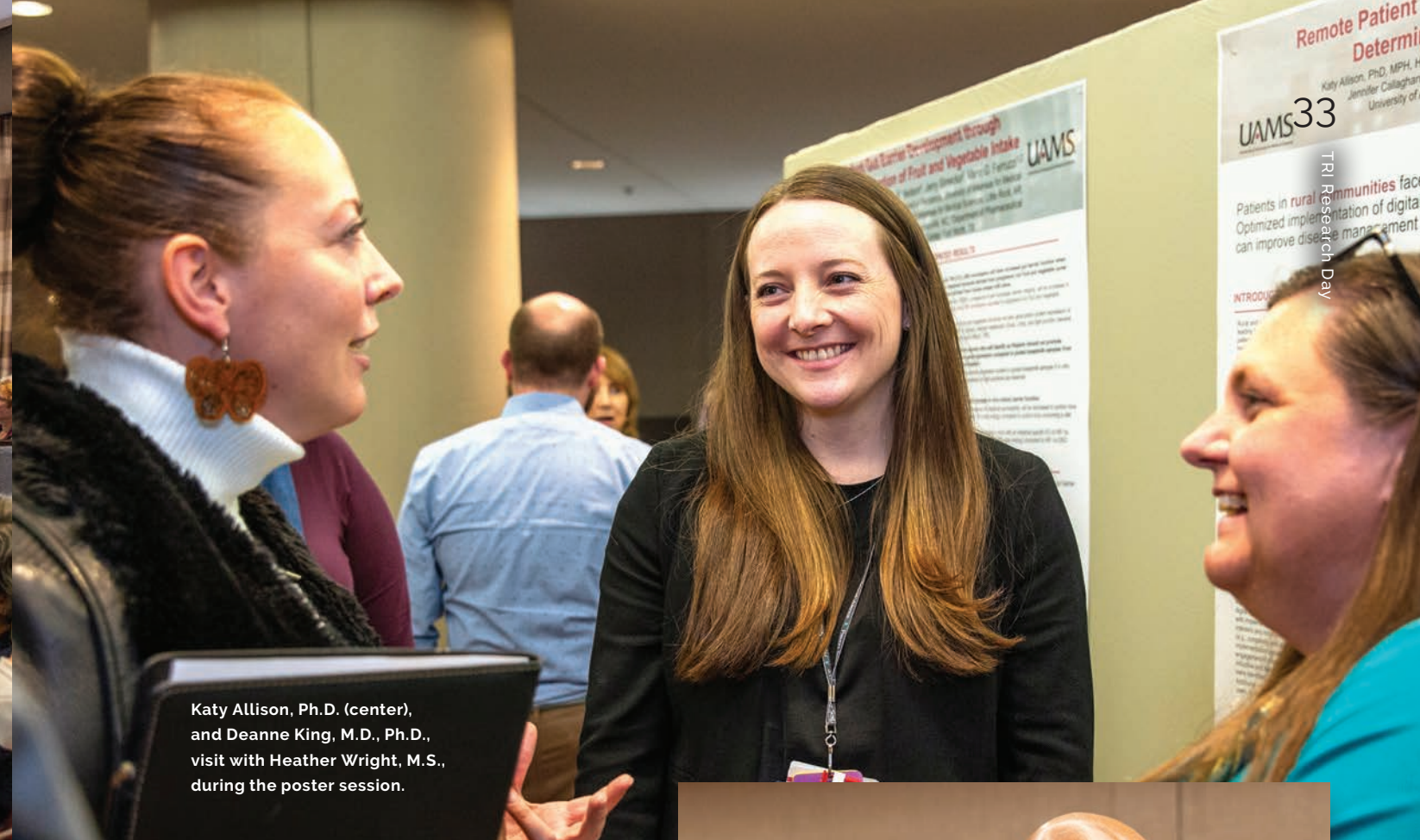


Trey Spencer (left) and Reid Landes, Ph.D., were friends outside of work. Here at the Arkansas Traveller 100 ultramarathon, Spencer served as Landes' crew.

Research Day



Susan Emmett, M.D., presented to more than 100 Research Day attendees.



Katy Allison, Ph.D. (center), and Deanne King, M.D., Ph.D., visit with Heather Wright, M.S., during the poster session.

Real-World Impact

RESEARCH DAY SPEAKERS EXHIBIT,
EXTOL TRANSFORMATIVE SCIENCE

TRI Research Day 2024 drew enthusiastic applause from the 109 attendees who soaked in illuminating keynote presentations by Susan Emmett, M.D., MPH, and Al Richmond, MSW, as well as novel research discussed in oral presentations and at the poster session featuring TRI-supported researchers.

"This is really a day of celebration where we just show you the tip of the iceberg on many, many things that are being accomplished throughout our state in translational research and translational science, ultimately toward improving health outcomes for the citizens of Arkansas," said TRI Director Laura James, M.D., who welcomed attendees to the third annual event.

Richmond is executive director of Community-Campus Partnerships for Health, which was founded in 1998 to promote health equity and social justice through partnerships between communities and academic institutions. He is co-principal investigator of the North Carolina Community

Engagement Alliance Project and the Community Engagement Alliance Consultative Resource.

He encouraged attendees to seek out transformative experiences, meaningful outcomes in their research, and health equity.

"I want you throughout the day and long after I'm gone to just hold on to that vision for equity in your work," Richmond said. "Work with your teams and ask yourself this question: 'If you don't do anything else, how are we advancing equity or how are we hindering or not achieving equity?'"

'THE EXTRA MILE'

Emmett's work is an exemplar of Richmond's vision.

As founder and director of the UAMS Center for Hearing Health Equity – the first of its kind in the world – she is leading a large-scale implementation project that will bring hearing care to rural Arkansas and other states. The project is built on years of research and

overcoming barriers, from restrictive health policies to technology and cost limitations. Before joining UAMS in 2022, she spent three years leading a foundational randomized trial in this area in rural Alaska, where the prevalence of hearing loss, primarily from childhood ear infections, is six-to-nine times the U.S. average.

"We can't do research for research's sake, because then we have stopped short of real-world impact," said Emmett, an associate professor of otolaryngology and epidemiology. "It's about going that last mile, creating the evidence, and then working with policymakers to ensure that it is put into practice to actually change lives."

With collaborators across the globe, she aims to significantly reduce the burden of travel and other issues that prevent hearing loss diagnosis and treatment.

She noted that even mild hearing loss doubles the risk of dementia as well as the risk of unemployment. It also triples

the risk that a child won't graduate from high school, yet 70% of children identified with possible hearing loss in schools are lost to follow-up and never enter the healthcare system for treatment. About 80% of individuals with hearing loss worldwide live in rural and underserved settings.

BRINGING IT HOME

"We are bringing innovations home to transform health care delivery right here in this state," said Emmett, founder and director of Global Hearing Loss Evaluation, Advocacy and Research (HEAR) Collaborative, a multidisciplinary group with collaborators from 28 countries. "I invite you to join us; join us in changing the world. Research has the capacity to change the way that health care is delivered in rural America and beyond."

She also encouraged the audience's many research trainees.

"There are so many opportunities for you to create lasting change with the work that you are doing," said Emmett, who is also the founder and director of HEAR – USA, a national research network dedicated to addressing disparities in hearing loss in underserved and minority U.S. populations. "We have trainees involved in every single project that we do, and we tailor educational experiences for our trainees to fit perfectly with the work that they are doing academically so that they have exposure to real-world research."

Laura James, M.D., and Al Richmond, MSW.





TRI community partner
Rev. Willie Wade Jr.,
director of Difference
Makers of Hot Springs,
listens to a presentation.



Jessica Presley, MPP, checks her
program during the poster session.



Spyridoula Maraka, M.D., and
Chenghui Li, Ph.D., enjoy hors
d'oeuvres and conversation
during the Research Day
poster session.

IN THEIR OWN WORDS

Research Day was an opportunity for investigators and research staff to network, gather ideas and feed off the enthusiasm of their peers. Here is what some had to say:



"It was great to see what so many other people are doing. This is one of those events where you find ways to engage with other collaborators and come up with creative solutions to problems."
— **Jocelyn Anderson Ph.D., RN**, associate professor, UAMS College of Nursing

"Having a Research Day like this is very helpful because we all do our research in different locations, and we rarely get a chance to talk to each other. When you come here and attend some of these research meetings, you get to hear about basic science, clinical science and community partnered projects."
— **Shruti Tewar, M.D., MPH**, associate professor of pediatrics and TRI Implementation Science Scholars Program participant



"Research Day gives us an opportunity to mingle with like-minded research professionals, voice our achievements, seek advice from our counterparts, and brainstorm together to find answers to lingering questions. More than that, these gatherings spur new collaborations, ideas and connections."
— **Laura Adkins, MAP, CCRP, CCRA, CRS, AdvCRS**, director, UAMS Office of Research Regulatory Affairs

"The Research Day was the first conference I attended after joining UAMS two months ago. It was very well organized, and I learned a lot from presentations and meeting with new colleagues. Specifically, I am impressed by the translational effort of the TRI, which brings researchers across the campus together. As a molecular cancer epidemiologist, I hope to integrate more molecular tools into population-based research and contribute to the ongoing success of the TRI."
— **Yong Zhu, Ph.D.**, professor, Fay W. Boozman College of Public Health, and associate director for population science and translational science, Winthrop P. Rockefeller Cancer Institute

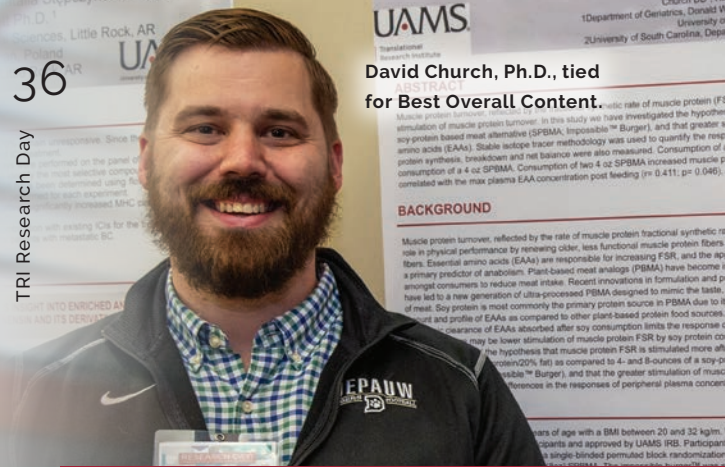


"This is a wonderful way to learn about all of these other researchers and clinicians that have similar stories like mine. They're implementing research that they are so passionate about, and they are overcoming barriers and creating their own pathway to get to their dream."
— **Ashley Pike, Ph.D.**, postdoctoral fellow, TRI Health Sciences Innovation and Entrepreneurship Program trainee

"Coming from a basic science background, I really appreciated the examples of how researchers have involved the community in their research. That and the networking opportunities have provided me with new ideas and resources to help guide my research to the next translational step. Ultimately, I want my research to impact human health in a meaningful way and it seems that Research Day was beneficial in this regard."
— **Brian Piccolo, Ph.D.**, assistant professor of pediatrics, Arkansas Children's Nutrition Center, and TRI KL2 scholar and pilot grant recipient



"As one of the program evaluators of the TRI, it was wonderful to watch the presentations and see the exceptional work being done by the TRI scholars. Hearing the scholars talk about their experiences and the support they received from their mentors demonstrates how well those programs are conducted and the importance of those support networks to produce exceptional research."
— **Alex Jauregui-Dusseau, DH.Sc.**



David Church, Ph.D., tied for Best Overall Content.



Stephen Shrum, Ph.D., tied for Best Overall Content.

RESEARCH DAY 2024 POSTER CONTEST WINNERS

TRI Director Laura James, M.D., concluded Research Day with the presentation of poster awards in four categories, selected by a four-judge panel of UAMS faculty. The winners and poster titles are:

BEST OVERALL CONTENT (TIE):

David Church, Ph.D., assistant professor, College of Medicine Department of Geriatrics; TRI Strategies for Training and Advancing underrepresented Researchers (STARS) Program participant *Muscle Protein Synthesis and Whole-Body Protein Balance Following Ingestion of Beef or a Soy Protein Based Meat Alternative*

Stephen Shrum, Ph.D., TL1 postdoctoral scholar in the TRI Health Sciences Innovation and Entrepreneurship (HSIE) training program, College of Pharmacy Department of Pharmaceutical Sciences. *Development of a Novel Tocotrienol Analogue, Tocoflexol, as a Radiomitigator*

BEST OVERALL IMPACT:

Timothy "Cody" Ashby, Ph.D., assistant professor, College of Medicine Department of Biomedical Informatics, KL2 scholar *Unraveling the Impact of Alternative Splicing in Multiple Myeloma*

BEST OVERALL VISUAL:

Akilah Jefferson, M.D., M.Sc., assistant professor, College of Medicine Department of Pediatrics, Division of Allergy and Immunology; TRI KL2 Mentored Research Career Development Scholar Award Program participant (KL2 scholar) *Association of Asthma Specialty Care and Adverse Outcomes for Children Enrolled in the Arkansas Medicaid Program*

PEOPLE'S CHOICE:

Megha Sharma, M.D., M.S., assistant professor in the College of Medicine Department of Pediatrics, Division of Neonatology, KL2 Scholar *Objectively Assessed Skin Color and Its Association with Pulse Oximeter Bias in Critically Ill Infants*

Winners of the Content, Visual and Impact awards received certificates for their choice of an electronic manuscript submission or support for design of a research poster via TRI, and the People's Choice winner received a certificate for manuscript submission fee support up to \$2,000.



ORAL PRESENTATIONS HIGHLIGHT WORK IN TRI-SUPPORTED PROGRAMS

Research Day 2024 included oral presentations from eight researchers in four TRI-supported programs, listed below with their presentation titles:

KL2 MENTORED RESEARCH CAREER DEVELOPMENT PROGRAM SCHOLARS

Megha Sharma, M.D., M.S., assistant professor, College of Medicine Department of Pediatrics, Division of Neonatology

Objectively Assessed Skin Color and its Association with Pulse Oximeter Bias in Critically Ill Infants

Nakita Lovelady, Ph.D., MPH, assistant professor, Fay W. Boozman College of Public Health Department of Health Behavior and Health Education

A Path Forward: Exploring Implementation of a Hospital-based Violence Intervention Program in Rural Arkansas

TL1 HEALTH SCIENCES INNOVATION AND ENTREPRENEURSHIP PROGRAM TRAINEES

Lauren Fitzgerald, Ph.D., postdoctoral fellow, College of Medicine Department of Psychiatry

Path to Hidalga

Stephen Shrum, Ph.D., postdoctoral fellow, College of Pharmacy Department of Pharmaceutical Sciences

Development of a Novel Tocotrienol Analogue, Tocoflexol, as a Radiomitigator

PILOT AWARDEES

Karen Dickinson, M.D., Ed.D., director, IPE Simulation and Clinical Skills Training, UAMS Office of Interprofessional Education; assistant professor of surgery

Simulation for Training Team Response to Patient Prejudice Towards Providers

Chenghui Li, Ph.D., associate professor, College of Pharmacy Department of Pharmacy Practice

Assessing Sampling Bias of the Arkansas All-Payer Claims Database (APCD) and its Linkage with Arkansas Cancer Registry

IMPLEMENTATION SCIENCE SCHOLARS

Amit Agarwal, M.D., associate professor, College of Medicine Department of Pediatrics, Section of Pediatric Pulmonary and Sleep Medicine

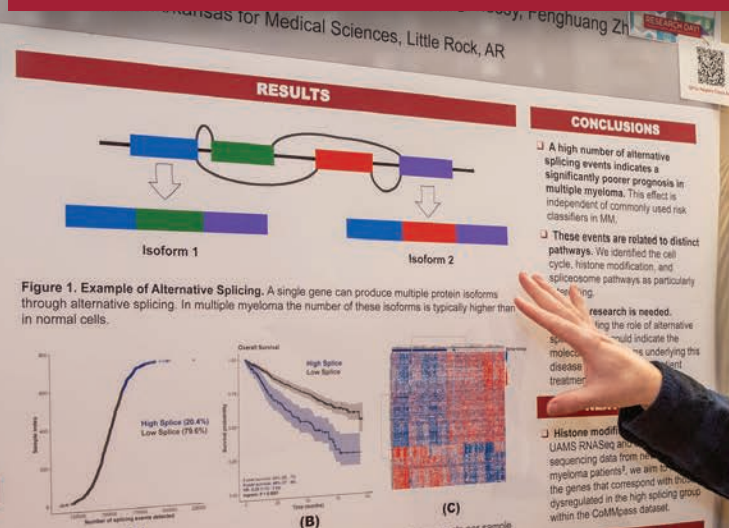
Enhancing Care for Children Requiring Long-term Home Mechanical Ventilation: A Multidisciplinary Team Approach with Simulation-Based Training

Shipra Bansal, M.D., associate professor, College of Medicine Department of Pediatrics, Division of Pediatric Endocrinology and Diabetes

Implementing Standardized BONE Health Care Guidelines in Children with Duchenne Muscular Dystrophy



Megha Sharma, M.D. presents on her project.



Timothy Cody Ashby, Ph.D., won Best Overall Impact.

“The whole idea of going to the community and talking to them about the ARresearch registry and research is fantastic.”

— Diana Escalona-Vargas, Ph.D.

Fertile Ground

Researchers Join TRI at State Fair to Recruit for ARresearch Registry

The annual Arkansas State Fair has been a great venue for recruiting potential research volunteers to the ARresearch registry, and 2023 was no different.

During the 10-day October event, the registry grew by more than 300 volunteers — bringing the number of Arkansans willing to be contacted by UAMS about research participant opportunities to more than 9,000.

A novel feature of the 2023 event was the first-ever involvement of researchers and their teams, who recruited alongside TRI staff for the ARresearch registry as well as their own studies.

The participating investigators included Diana Escalona-Vargas, Ph.D., a UAMS assistant professor in the College of Medicine Department of Pediatrics and scientific director of the Magnetoencephalography (MEG) Lab at Arkansas Children's Hospital (ACH).

“The whole idea of going to the community and talking to them about the ARresearch registry and research is fantastic,” said Escalona-Vargas, who conducts translational MEG research with epileptologists, neurosurgeons and other researchers.

“I talked to some of the people about my research study, and I

noticed all kinds of reactions when I approached them,” she said. “The one that I liked the most was that as soon as they realized it was research from UAMS-ACH, they would ask questions and take a flyer about my research or others.”

She added that those with an interest in research were also usually excited to join the ARresearch registry.

“We heard inspiring stories about their family members who have already participated in a research study because of the registry,” she said.

Nikki Shea Phillips, a research assistant at the UAMS Psychiatric Research Institute, said the State Fair was a learning experience and a value to her team, which is led by Ashley Acheson, Ph.D., a professor in the Department of Psychiatry.

“It gave us insight as to challenges potential participants face regarding research — from fears of medical involvement to barriers such as travel costs or lack of transportation,” said Phillips, whose team is conducting research related to alcohol use. “Talking with people who stopped by our booth allowed us to identify and talk through these issues with them, and our team later discussed

the ways we could help alleviate these barriers.”

Clyde E. Rhodes, II, a research program manager in the Fay W. Boozman College of Public Health, said his time at the State Fair was tremendous. Although recruiting African American men for his team's study, led by Brooke Montgomery, Ph.D., an associate professor, was a challenge, the experience was worthwhile. Engaging with fairgoers and getting to know other researchers and TRI staff such as Pamela Christie, ARresearch program manager, was especially rewarding, he said.

“Our conversations and laughter among the team as well as with the people stopping at the booth was awesome,” he said.

Recruiting at the State Fair was also a first for Al Keyes, BSN., RN, CRS, who joined TRI in 2023 as director of Clinical Trials and oversees the ARresearch registry.

“I think community events like the State Fair are a great opportunity for us to interact with the public, give them insight on the kinds of research we're conducting, and to let them know about the registry,” Keyes said. “We spoke with people from all walks of life, and for many of those who signed up, it was because of a personal health experience or a family member with a serious health condition.”

For more information, visit ARresearch.org or contact Pam Christie, PChristie@uams.edu.

The total number of registrants in the ARresearch participant registry climbed above 9,000 in 2023, thanks in part to more than 300 sign-ups during the October 2023 Arkansas State Fair.



TRI's Al Keyes (center) enjoyed recruiting for the ARresearch registry at the Arkansas State Fair with research teams represented by (l-r) Dylan Nguyen, Nikki Phillips and Diana Escalona-Vargas, Ph.D.

Arkansas C
Brain Mapping

To understand the relations
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- One, 3.5-hour visit
- Two images using magnetoencephalography (MEG) and magnetic resonance imaging (MRI)

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For more information:
MEG Center



Michael Bauer, Ph.D. (right), said TRI's Antiño Allen, Ph.D., became an invaluable mentor as he launched his first wet lab study.

'NOW WHAT?'

TRI HELPS STARs GRADUATE MICHAEL BAUER, PH.D., TACKLE NEW CHALLENGES

The first research grants of his career created challenges that Michael Bauer, Ph.D., hadn't fully prepared for. In 2022, Bauer, who has more experience with data analysis than examining biospecimens, was suddenly leading grants that required wet lab experiments.

The assistant professor in the Department of Biomedical Informatics is a 2021 graduate of TRI's Strategies for Advancing and Training underrepresented Researchers (STARs) program. The three-month program offers grant-writing training, mentoring support and \$10,000 in Equity, Diversity and Grantsmanship Expertise (EDGE) funding.

Bauer, a myeloma researcher based at the UAMS Winthrop P. Rockefeller Cancer Institute, credits the STARs training

for helping him secure a two-year \$336,314 NIH National Cancer Institute Research Supplement to Promote Diversity in Health-Related Research, as well as a \$50,000 Seeds of Science grant from the cancer institute.

It was exciting to land his first awards, he said, but also intimidating.

"When you do finally get a grant, you're thinking, 'Now what?' because there are a whole set of new issues to consider," he said. "You can be paralyzed by how much you have to

do – trying to figure it out – or scared you might use the money in the wrong way."

He shared his trepidation with TRI Director Laura James, M.D., who had helped lead his STARs training, and she put

"You can be paralyzed by how much you have to do – trying to figure it out – or scared you might use the money in the wrong way."

— Michael Bauer, Ph.D.

TRI's Strategies for Advancing and Training underrepresented Researchers (STARs) program provides **three-months of grant-writing training, mentoring support and \$10,000 in Equity, Diversity and Grantsmanship Expertise (EDGE) funding.**

Bauer in contact with Antiño Allen, Ph.D., who became TRI associate director of Pathway Initiatives in 2022.

It was the lifeline that Bauer needed. He and Allen began meeting monthly in October 2022, and Allen became one of his official mentors.

"I had never done any wet lab research except as an undergraduate biology major, so Dr. Allen helped me figure out how to set it up," Bauer said. "He even helped me with ordering the things I needed and connected me with the buyers for his laboratory supplies."

Allen is a professor in the College of Pharmacy Department of Pharmaceutical Sciences, and the Graduate School's associate dean of Pipeline and Career Development.

He said Bauer was forced to adopt a different mindset as a wet lab scientist.

"I told him that by doing the wet lab work, you're actually learning how the omelet's made versus getting it already made for you," Allen said.

Taking the big step into wet lab science should complement Bauer's informatics research in the years to come, he said.

"It's going to be great for him after coming out of the STARs program, and now he's got that live experience. He's going to be more equipped to actually generate his own data versus dependent upon other people to give it to him."

Allen said TRI's STARs program leaders are working on how to support all STARs participants like Bauer after they have graduated from the program.

"We can be better mentors, and not just mentors, but advocates for the people that come out of STARs," he said. "And then we can try to understand where they are in their career and where we can expand upon not just the grant writing part, but the actual science and how to help them grow that part of their work, too."

FOUR STARs PROGRAM SCHOLARS NAMED FOR 2023

TRI and the UAMS Division for Diversity, Equity and Inclusion (DDEI) named four scholars for the 2023 Strategies for Training and Advancing underrepresented Researchers (STARs) Program.

The scholars are:



GINA DROBENA, M.D., associate professor, UAMS College of Medicine Department of Pathology



BERNARD MURIITHI, PH.D., assistant professor, UAMS College of Health Professions Department of Occupational Therapy



PILAR MURPHY, PHARM.D., MPH, associate professor, UAMS College of Pharmacy Department of Pharmacy Practice



BRITTANY WILKERSON, MPAS, PA-C (physician assistant-certified), assistant professor, UAMS College of Health Professions Department of Physician Assistant Studies

The STARs program is a three-month program led by faculty with extensive grant-writing and mentorship experience, and offers a set of trainings to help participants strengthen their research and grantsmanship skills. At the conclusion of the program, each participant receives \$10,000 in Equity, Diversity and Grantsmanship Expertise (EDGE) funding for a research project.

Supported with funds through TRI and the office of the vice chancellor for UAMS Research & Innovation, the program is available to all UAMS-affiliated faculty who meet the NIH definition of underrepresented individuals in the scientific workforce. This includes faculty from racial and ethnic groups, individuals with disabilities, and those from disadvantaged backgrounds.

Antiño R. Allen, Ph.D., professor in the UAMS College of Pharmacy and associate director of Pathway Initiatives at TRI, leads the STARs program didactics. He is also associate dean of Pipeline and Career Development at the Graduate School.

BRANCHING OUT

RURAL RESEARCH NETWORK HELPS TEST HOME VISITS FOR NUTRITION PROGRAM

We Are...

FAMILY MEDICINE

Taren Swindle, Ph.D., and Lorraine McKelvey, Ph.D., pose with Windy Wise, the puppet owl used in their innovative nutrition education program.



A Veggie Meter, which uses a finger scan to estimate fruit and vegetable intake, showed a large treatment effect of the WISE intervention. This means that **children exposed to WISE Home Visiting had a significant increase in their carotenoid intake while children in the control condition did not.**

After securing multiple federal grants in recent years to implement a novel nutrition education program in preschool settings, UAMS' Taren Swindle, Ph.D., and Lorraine McKelvey, Ph.D., recently found that their program holds promise as an in-home intervention in rural Arkansas.

By leveraging the UAMS Rural Research Network, the investigators were able to reach populations underrepresented in research and with higher rates of obesity and chronic health conditions. The project has special meaning for Swindle.

"I'm from rural northeast Arkansas, so it's exciting for me to get to do research in the rural parts of our state," said Swindle, an associate professor in the College of Medicine Department of Family and Preventive Medicine. "I really value that — it feels personal."

The nutrition education program is called Together, We Inspire Smart Eating (WISE) and includes a mascot that Swindle co-created — a puppet owl named Windy WISE. The concept, which engages children, preschool teachers, and now parents, was the focus of Swindle's research when she became a TRI Mentored Research Career Development Award scholar (KL2) in 2014.

The in-home study, funded by a \$100,000 UAMS Winthrop P. Rockefeller Cancer Institute pilot grant, is one of many ways that she and the WISE team hope to broaden the program's impact.

The results of the study are promising, Swindle said, showing that daily intake of fruits was 23% higher after the intervention while daily intake of sugary drinks was 33% lower and sweets consumption was 40% lower.

A Veggie Meter, which uses a finger scan to estimate fruit and vegetable intake, showed a large treatment effect of the WISE intervention. This means that children exposed to WISE Home Visiting had a significant increase in their carotenoid intake while children in the control group did not.

In addition, parents were unanimous in their support, with 100% strongly agreeing and or agreeing that the WISE home visits were appealing, and they welcomed WISE activities in their homes.

"We wanted to determine what's possible in engagement with these communities and does this approach have an

impact, or at least a signal of an impact," Swindle said. "Our goal now is to expand our research with a larger grant that will help us validate whether this approach can work on a wider scale."

The Rural Research Network is a partnership with UAMS Regional Programs, which operates eight UAMS regional campuses around Arkansas. In addition to TRI, other partners are the UAMS Winthrop P. Rockefeller Cancer Institute and the Institute of Community Health and Innovation. The Rural Research Network sites are staffed by research coordinators who live in the areas they serve.

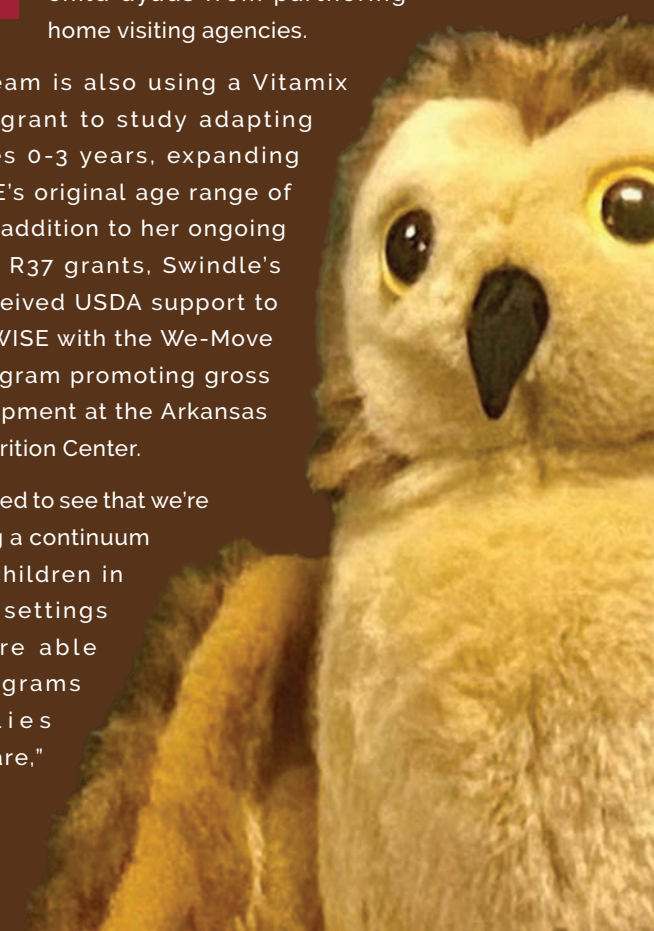
Swindle and McKelvey's home-based study used the UAMS North Central Regional Campus in Batesville with assistance from the UAMS Northeast Regional Campus in Jonesboro, as well as the Cancer Institute's patient navigator based at the Batesville campus. The team recruited 53 parent-child dyads from partnering home visiting agencies.

The WISE team is also using a Vitamix Foundation grant to study adapting WISE to ages 0-3 years, expanding beyond WISE's original age range of 3-5 years. In addition to her ongoing NIH R21 and R37 grants, Swindle's work has received USDA support to incorporate WISE with the We-Move research program promoting gross motor development at the Arkansas Children's Nutrition Center.

"I'm most excited to see that we're now providing a continuum of care for children in a variety of settings so that we're able to meet programs and families where they are," Swindle said.

"Our goal now is to expand our research with a larger grant that will help us validate whether this approach can work on a wider scale."

— Taren Swindle, Ph.D.



Nancy Rusch, Ph.D. (l-r),
with Kevin Sexton, M.D.,
and John Imig, Ph.D.



SUCCESSFUL SUCCESSION

NANCY RUSCH, PH.D., EXITS NOVEL ENTREPRENEURSHIP PROGRAM SHE BUILT

Nancy Rusch, Ph.D., is a natural leader, but she also values being a good team player and hopes she will be remembered as one. That was evident three years ahead of her departure as founding director of TRI's TL1 (now T32) Health Sciences Innovation and Entrepreneurship (HSIE) Training Program.

In 2020, she identified Kevin Sexton, M.D., as a likely successor, followed by John Imig, Ph.D., in 2022.

"We knew that there was going to be a transition, and I was going to be moving toward retirement, and I thought he and Dr. Imig would be perfect as directors," said Rusch, who stepped down in March 2023 but remains at UAMS as

distinguished professor and chair of the Department of Pharmacology and Toxicology.

Sexton joined Rusch and the late Nancy Gray, Ph.D., as a co-director of the HSIE program four years ago and was Rusch's successor as principal investigator on the T32 award. Imig, who joined UAMS in 2022 as professor and chair of the Department of Pharmaceutical Sciences in the College of Pharmacy, became a co-director and successor to Sexton, who will continue to lead entrepreneurial training programs and innovation at the University of Vanderbilt. Imig was also named vice president of therapeutics at BioVentures LLC, which supports startup companies, technology

transfers, and fosters commercial investment in the inventions and discoveries of UAMS-affiliated researchers.

His expertise includes a strong history in drug development and biotech accelerator programs at the Medical College of Wisconsin, Milwaukee, prior to joining UAMS.

The succession plan for Sexton and Imig helped ensure continued NCATS funding, with the T32 application receiving an exceptional score of 18 and funding for five more years starting July 1.

"One of the most important things that people can do when they are leading a program is to make sure that there's

Seventeen postdoctoral fellows have been selected to the TL1 Health Sciences Innovation and Entrepreneurship Training Program since its inception in 2019.

a good transition and that it's set up in a way that NIH will approve it," Rusch said. "And that's really what we did with Dr. Sexton and Dr. Imig."

GRATIFYING EXPERIENCES

Seventeen postdoctoral fellows have been selected for the two-year HSIE program since its inception in 2019.

Rusch said her most gratifying experiences leading the HSIE program have been working with the trainees.

"I love mentoring and helping young people with their careers, and we have gotten some really amazing postdocs into that program," she said.

The HSIE program includes a partnership with the Sam M. Walton College of Business at the University of Arkansas in Fayetteville. Rusch said the program wouldn't be possible without the partnership formed with the business school's Sarah Goforth, executive director of the Office of Entrepreneurship and Innovation, and David Hinton, Ph.D., MBA, executive director of Technology Ventures. Goforth recently joined the National Science Foundation (NSF) as a program

director in the Regional Innovation Engines program.

"They've been wonderful partners," Rusch said. "They take our postdocs, and they turn them into people that can talk about selling companies or developing products. It's kind of like magic when you see them giving their business plan pitches."

"Dr. Imig is a proven innovator, and he will bring new ideas for moving the program forward."

— Nancy Rusch, Ph.D.

Stepping away from the program wasn't difficult because she knows it is in good hands.

"Dr. Imig is a proven innovator, and he will bring new ideas for moving the program forward," she said. "I think it might look differently five years from now than it does today."

*Editor's note: As this issue went to press, Kevin Sexton, M.D., accepted a new opportunity at Vanderbilt University where he will continue to lead entrepreneurship training programs and innovation. He will be a professor of surgery, vice chair of Innovation for the Section of Surgical Sciences, and hold the inaugural Abumrad Directorship in Innovation. As part of TRI's succession plan, we are excited to name **John Imig, Ph.D.**, an expert in drug development and biotech accelerator programs, as principal investigator of the T32 Health Sciences Innovation and Entrepreneurship (HSIE) Training Program. His strong history in drug development will bring a new area of emphasis to the program, along with opportunities to collaborate with numerous laboratories, basic science and clinical departments, and institutes across UAMS where drug development is a focus.*

Two Selected for Entrepreneurship Training Program

Two postdoctoral trainees began the two-year TRI TL1 Health Sciences Innovation and Entrepreneurship (HSIE) Postdoctoral Training Program in July 2023. Both were chosen through a competitive application process and are receiving mentored entrepreneurship training. The HSIE trainees, their research goals and mentors are:



Henry A. Palfrey, Ph.D., a postdoctoral fellow in the College of Pharmacy Department of Pharmaceutical Sciences.

His research goal is to conduct studies to screen a library of compounds and determine the ability of novel epoxy lipid drugs to provide protection against radiation-induced kidney and cardiovascular injury.

Mentor: John D. Imig, Ph.D., professor and chair, Department of Pharmaceutical Sciences; and vice president for therapeutics at BioVentures LLC.

Ashley Pike, Ph.D., a postdoctoral fellow in the Brain Imaging Research Center of the Psychiatric Research Institute (PRI).

Her primary research goal is to implement advanced neuroimaging techniques for clinical problem solving in multiple sclerosis (MS).

Mentor: Tatiana Wolfe, Ph.D., assistant professor, medical imaging physicist, PRI, College of Medicine Department of Psychiatry.



The HSIE program is a partnership between TRI, BioVentures and the Entrepreneurship Graduate Program in the Sam M. Walton College of Business at the University of Arkansas, Fayetteville. The program aims to broaden the scholars' vision of using entrepreneurship principles and team science to accelerate biomedical discoveries into improved health outcomes.

New Leader Hopes to Build on Achievements of Entrepreneurship Program

A federally funded program that teaches postdoctoral researchers how to be entrepreneurs was unheard of when John Imig, Ph.D., was early in his career.

Today he is leading TRI's T32 Health Sciences Innovation and Entrepreneurship (HSIE) Postdoctoral Training Program after sharing a co-director role with Kevin Sexton, M.D., and the program's founding director, Nancy Rusch, Ph.D.

As an early-career faculty member, Imig had no entrepreneurial skills when he joined a colleague in starting a biotech company. Such matters as intellectual property and how to protect it, venture capital, pitching to investors — all of it was foreign to him.

"I knew none of it, and I wish before I had been thrown into that fire that I would have known what our HSIE trainees are learning today," he said.

He discovered that the HSIE program offers a unique opportunity that combines research with

entrepreneurship in a way that he hadn't seen before.

Rusch, he said, has bequeathed UAMS an exceptional program.

"She did the heavy lift. She went from nothing to creating a program that is highly structured, effective and beloved by our alumni," Imig said.

"I wish before I had been thrown into that fire that I would have known what our HSIE trainees are learning today."

— John Imig, Ph.D.

Imig joined UAMS in 2022 as professor and chair of the Department of Pharmaceutical Sciences in the College of Pharmacy, and he became vice president of therapeutics at BioVentures.

His experience includes co-founding three therapeutics companies, and he holds seven U.S. patents for

various drugs, with several pending applications.

In addition, he developed biotech accelerator programs at his previous institution — the Medical College of Wisconsin, Milwaukee, where he also won multiple Outstanding Educator awards.

Imig is hoping to build on the program's solid foundation. His role with BioVentures, which offers both early-stage funding and a full suite of educational programming, dovetails nicely with the HSIE mission, he said. He believes it could lead to new opportunities for the program.

"We want to serve more scholars," Imig said. "Now that we have a track record of success, we are looking for opportunities to engage industry to sponsor postdocs to go through the program, and any other ways that we can increase the number of trainees."

In 2023, HSIE trainees Megan Reid, Ph.D. (left), and Julia Tobacyk, Ph.D., formed **Pediatrica Therapeutics LLC**, a pharmaceutical startup to develop a potential new drug to reduce a harmful metabolite that contributes to neonatal opioid withdrawal syndrome. Their student team won or placed in competitions across the United States, including first place in the Arkansas Governor's Cup Collegiate Business Plan Competition, which came with a \$20,000 prize.



TRI Director **Laura James, M.D.**, led a team of five guest editors addressing clinical trial quality in a themed issue of the *Journal of Clinical and Translational Science*.



Laura James, M.D.

Change Agent

NATIONAL JOURNAL DEVOTES ISSUE TO PROJECT LED BY TRI'S LAURA JAMES, M.D.

TRI Director Laura James, M.D., concluded her tenure as co-chair of the CTSA Steering Committee in December 2023 with an effort aimed at making clinical trials more informative and of higher quality. Her work, and those of other CTSA leaders, appears in a themed issue of the *Journal of Clinical and Translational Science* (JCTS), published in February.

Leading a team of five guest editors from CTSA institutions across the United States, James served as the first author of the journal issue's editorial, "Scientia Pro Bono Humani Generis: Science for the Benefit of Humanity," which introduces readers to the emphasis of the February issue.

The work was inspired by a 2019 paper in the *Journal of the American Medical Association* entitled, "Harms from Uninformative Trials." The JAMA authors defined an uninformative trial as one lacking in meaning by the patient, clinician, researcher or policymaker.

In the JCTS editorial, James and her co-authors acknowledge the problems

associated with uninformative clinical trials, writing, "Academic health organizations, funding agencies, and clinical trialists have been challenged to optimize clinical trial informativeness, and quality issues continue to plague the development and conduct of clinical trials."

"We're asking, what are the academic health organizations doing to ensure that their trials are of the highest quality, and are they really going to have an impact on human health?"

— Laura James, M.D.

Multiple potential solutions are offered in the journal's manuscripts, which highlight innovations for enhancing the informativeness and quality of clinical trials.

One example for improving clinical trial efficiency is the use of adaptive trials, James said. Adaptive trials use

prespecified rules to modify the course of a trial and to optimize it based on the incoming results.

"Adaptive trial designs are a new approach to clinical trials that are moving us away from traditional double-blind placebo-controlled trials," James said.

Infrastructure, training, participant recruitment and other factors are addressed in the report.

"We looked at multiple aspects of uninformative clinical trials in this issue, so we addressed common problems at the institutional as well as the study level," James said. "We're asking, what are the academic health organizations doing to ensure that their trials are of the highest quality, and are they really going to have an impact on human health?"

"As stewards of public funds that support the development of clinical trials, it is critical that we optimize clinical trial designs so that we create trials that move us forward in improving the health of individuals and communities," she said.

Research Expo 2023 drew **114 attendees** who got to visit with leaders of all the key research services at UAMS, Arkansas Children's Research Institute (ACRI) and Central Arkansas Veterans Healthcare System (CAVHS).

Camaraderie Squared

INVESTIGATORS SOAK IN RESEARCH EXPO'S ABUNDANT RESOURCES, SERVICES

Alberto Ramirez, Ph.D., was excited to attend Research Expo 2023, with its 50 research services and resources on display.

"As an early-career researcher, the event proved to be remarkably valuable as it allowed me to gain insight into the numerous resources offered by UAMS, including TRI, Research & Innovation, and more," said Ramirez, a postdoctoral fellow in the College of Medicine Department of Obstetrics and Gynecology.

Sponsored by TRI, the Oct. 11 event drew 114 attendees who got to visit with leaders of all the key research services at UAMS, Arkansas Children's Research Institute (ACRI) and Central Arkansas Veterans Healthcare System (CAVHS).

Like others at the event, Laura Adkins, MAP, CCRP, CCRA, CRS, AdvCRS, director of the UAMS Office of Research Regulatory Affairs, said she experienced a sense of camaraderie among the many attendees.

"After the pandemic, it has been difficult to connect with others on a personal level due to the shift from consistent in-office schedules and face-to-face meetings with colleagues to hybrid or even 100% remote schedules and Zoom or Teams meetings," she said.

It's not uncommon to only meet colleagues virtually, which can lead to feelings of isolation, she said.

"This is where the Research Expo and similar events can really make a difference to the research community," Adkins said. "I look forward to these events and ones like it as ways to reconnect, always with the thought that through shared knowledge we can continue to move research forward together."

Emel Seker, M.S., an applications system analyst in the College of Medicine, said the expo provided a unique opportunity to discover cutting-edge resources and connect with individuals who share a passion for research.



TRI's Antiño Allen, Ph.D., associate director of Pathway Initiatives, speaks with Emel Seker, M.S.

"I look forward to these events and ones like it as ways to reconnect, always with the thought that through shared knowledge we can continue to move research forward together."

— Laura Adkins, MAP



"The expo was an invaluable experience for me, underscoring the significance of collaborative platforms in research," Seker said. "I was particularly impressed by the number of representatives from various research services. Meeting like-minded professionals who are not only knowledgeable but also open to collaboration was a highlight."

"This expo is great for new faculty members like me who are conducting research," said Lipika Sarangi, Ph.D., an assistant professor in the College of Health Professions Department of Audiology & Speech Pathology. "It's wonderful to have an event where you can meet new people, build your network, and find exactly the information that might be useful for your research today or in the future."

For example, she was able to learn how to access potential research volunteers in the ARresearch database established by TRI. The database includes more than 9,000 Arkansans who have agreed to be contacted for research studies.

"They told me the process, and I will definitely use ARresearch in the future," she said. "The resources I have found here will be very helpful for participant recruitment, grant writing and manuscript writing. I am looking forward to using these resources for my independent and collaborative research."

Ramirez said he was particularly interested in the opportunities available to assist with the grant-writing process and the potential benefits of the TRI Community Engagement Program. "I am definitely planning to establish connections with these resources."

In addition, he said, "the event emphasized the importance of networking, facilitating connections among all the stakeholders involved in the research process, from the initial spark of an idea in the researcher's mind to the practical implementation of results, all aimed at making a positive impact on the community."



Alberto Ramirez, Ph.D. (second from left), is a member of a research team led by Hari Eswaran, Ph.D. (center). Other members are (from left): Luis Mercado, Ph.D. post-doctoral fellow, Karina Leal, B.S.N., RNC-MNN, research nurse, and Heather Moody, RN, CRS, research nurse.



TRI's David Avery and Carrie Cochran-Raglon talk with Lipika Sarangi, Ph.D. (right).

A Path Forward

UAMS INFORMED CONSENT POLICY UPDATED TO ALLOW DRUG STUDY FOR MAJOR BLEEDING

While most clinical research protocols require obtaining informed consent from the patient, there are exceptions to this approach. Fortunately, the Food and Drug Administration (FDA) offers guidance on these types of exceptions, recognizing that some clinical research protocols, such as those conducted in emergency clinical settings, require a unique approach to conduct the research.

Conducting research in emergency clinical settings can be challenging, but it is necessary to advance the emergent care of patients with life-threatening illnesses.

Kyle J. Kalkwarf, M.D., a UAMS trauma surgeon and researcher, is leading a study to test the blood-clotting drug Kcentra®. The study requires an Exception from Informed Consent (EFIC) for planned emergency research and is testing the drug's ability to help trauma patients with life-threatening bleeding.

Kcentra® is currently FDA-approved only to reverse the effects of blood-thinner medications in bleeding patients or those who require emergency surgery. The study is focusing on patients who are not taking blood thinners.

Bleeding is the most common cause of preventable death after injury, and Kcentra® has shown efficacy in

"This research will answer important questions from the trauma community, and we think it will improve us as a trauma system."

— Kyle Kalkwarf, M.D.

improving outcomes in previous non-randomized clinical trials.

"If we can determine that Kcentra® is safe and effective for trauma patients, we can transform the standard of care for bleeding trauma patients and save many lives," said Kalkwarf, also a 2022 graduate of the TRI Implementation Science Scholars Program.

Called the Trauma and Prothrombin Complex Concentrate or TAP Trial, the study will involve 120 trauma centers around the world and enroll more than 8,000 patients. By March 2024, UAMS had enrolled 12 participants and has an enrollment goal of 52 by September 2026.

Kalkwarf worked with TRI's regulatory team, the UAMS Human Subjects Research Protection Program Plan, and other institutional stakeholders to update UAMS policies so that

TRI, Kyle Kalkwarf, M.D., and institutional stakeholders collaborated to update UAMS' informed consent policy to allow emergency research studies.

emergency-related clinical protocols could be conducted.

Prior to participation in the Kcentra® study, Kalkwarf conducted a community outreach campaign to share the planned study and receive feedback. It included social media advertisements, a community survey, and four online community forums. TRI assisted in generating communication between community members, Kalkwarf, and the research team. A 38-page report about the outreach effort shows that the social media campaign reached more than a third of the central Arkansas population served by UAMS' trauma center, with about 400 community members providing feedback via the community survey and meetings.

The community outreach included communication about the ability for anyone to opt out of the study by wearing a special bracelet. To date, there have been no requests for an opt-out bracelet in Arkansas.

Kalkwarf said UAMS' participation in the Kcentra® study is important because it will advance the state's only Level 1 Trauma Center.

"This research will answer important questions from the trauma community, and we think it will improve us as a trauma system," he said. "This is another way to pioneer innovative approaches to improve survival."

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