

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
Translational Research Institute

2019



TRI Annual Report



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 U54TR001629



**University of Arkansas for Medical Sciences (UAMS)
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 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.

UAMS[®]



**Arkansas
Children's**

HOSPITALS • RESEARCH • FOUNDATION



UAMS
TRI
Annual
Report

2019

EDITOR/WRITER
 David Robinson

CREATIVE DIRECTOR
 Mindy Stout

CONTRIBUTING WRITERS
 Spencer Watson
 Amy Widner
 David Wise

PHOTOGRAPHERS
 Bryan Clifton
 Johnpaul Jones

TRI DIRECTOR
 Laura James, M.D.

TRI EXECUTIVE DIRECTOR
 Amy Jo Jenkins, M.S.

 This report is produced by
 the UAMS Translational
 Research Institute (TRI).
 The content is solely the
 responsibility of the authors
 and does not necessarily
 represent the official
 views of the NIH.

Website: TRI.uams.edu
 Email: TRI@uams.edu
 TRI Main Number:
 (501) 614-2287

CONTENTS

MESSAGE FROM THE DIRECTOR 4

NURTURING TALENT 5

KEEPING THE FAITH 8

21ST CENTURY SCIENCE 9

DOING OUR PART 10

MODEL STUDENTS 13

SEEDING TRANSLATIONAL RESEARCH 14

A SEAT AT THE TABLE 16

BARRIER BREAKER 17

SERVICE ORIENTED 18

NO BOUNDARIES 20

HEALTH LITERACY NATIONAL IMPACT 21

FORMULA FOR SUCCESS 22

NETWORKING HUB 23

ON THE FAST TRACK 24

ON THE MENU 25

HISTORY MAKING 26





MESSAGE

from the Director



One of the things I enjoy most about the Translational Research Institute (TRI) is our role in promoting collaboration and teamwork across disciplines and institutions. It also happens to be a priority of the Clinical and Translational Science Awards (CTSA) Program, which offers new opportunities to researchers and research institutions willing to break free of their traditionally compartmentalized approaches.

At its core, the goal of translational research is to accelerate research and discoveries to improve health and health care. It requires collaboration and teamwork to ensure we are putting our efforts behind the best ideas and those that are most relevant to the populations we serve.

To become that catalyst at UAMS, TRI has built interdisciplinary and interinstitutional partnerships with research leaders from UAMS, Arkansas Children's Research Institute (ACRI) and the Central Arkansas Veterans Healthcare System (CAVHS). This spring, 71 individuals from these three institutions gathered for a daylong planning retreat at the Winthrop Rockefeller Institute on Petit Jean Mountain (above photo). Attendees included faculty and staff who are experts in clinical and translational research that covers the lifespan. Some brought a history of achievement in discovery (early phase) research, while others had seen their work impact communities and/or inform public policy (late phase research). Their spheres of science spanned drug discovery, community engagement, health services, digital health and health literacy, among others.

Their united commitment was clear, along with a recognition that enhancing health outcomes for Arkansans demands customized approaches and "out-of-the-box" ideas. It will require increasing our partnerships with individuals and communities most impacted by health disparities and lack of access to medical care.

As you read this report, I hope that you will share in my excitement over the customized approaches TRI is already using to help tackle some of Arkansas' biggest health challenges.

Sincerely,

Laura James, M.D.

Director, Translational Research Institute (TRI)

Associate Vice Chancellor for Clinical and Translational Research, UAMS

Nurturing Talent

Program Develops a New Class of Researchers

From its 2009 start, TRI has been helping educate the next generation of translational researchers.

At the core of this effort is the KL2 Mentored Research Career Development Scholar Program, which has helped a diverse group of UAMS researchers jump-start their careers.

Following a competitive application process, KL2 scholars receive 75 percent of their salary for two years - protected time for their research. They also get \$25,000 per year for research and education expenses, and robust mentoring.

UAMS' W. Brooks Gentry, M.D., professor in the College of Medicine Departments of Anesthesiology and Pharmacology and Toxicology, became co-director of the KL2 program this year. He joins Mary Aitken, M.D., M.P.H., replacing Pedro Delgado, M.D. Aitken is interim president of Arkansas Children's Research Institute.

"Dr. Aitken and Dr. Delgado have led the KL2 program to remarkable success," said Gentry, whose research has been supported by the NIH since 1996. "They have also done an extraordinary job expanding research training to early career researchers beyond the KL2 program. I'm honored to be a part of it, and I look forward to working with Dr. Aitken to help our new researchers succeed."

Standing Out

Lisa Brents, Ph.D., has excelled in the strong group of four KL2 scholars now wrapping up their two years in the program.

This year she became TRI's first KL2 scholar invited to speak as well as moderate a research panel discussion at the *Translational Science* annual

"The KL2 support and mentoring has accelerated my growth and increased my confidence as an early career scientist.

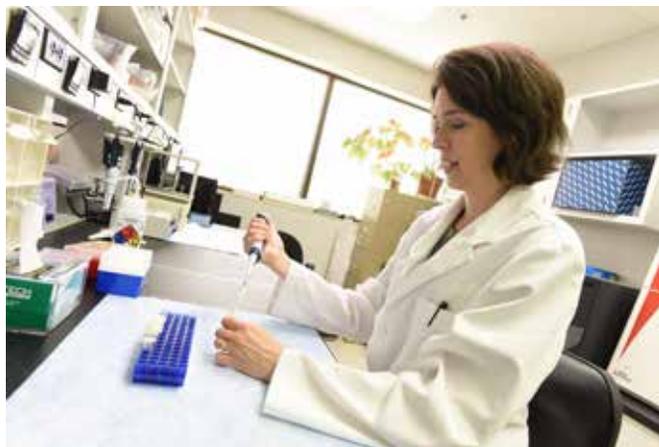
- Lisa Brents, Ph.D.



meeting in Washington, D.C.

Her lab is investigating ways to reduce neonatal

opioid withdrawal severity by developing new



Lisa Brents, Ph.D., in her lab at UAMS.

treatments for pregnant women with opioid use disorder. She is studying a modified version of buprenorphine (an opioid medication used to treat opioid abuse) that could potentially reduce fetal exposure to norbuprenorphine, which is a metabolite of buprenorphine and a powerful opioid.

Other current KL2 scholars:



Sufna John, Ph.D. John's research explores coordination of mental health care for young children with behavior disorders across clinical and childcare settings. Most children spend much of their day in non-parental childcare and receive inconsistent feedback on

their behavior due to a lack of coordination among mental health services at schools and clinics. John's research uses an implementation science framework to improve coordinated care across settings.

Rosemary Nabaweesi, Dr.P.H., M.B.Ch.B.



Nabweesi's research addresses sudden infant death syndrome and sleep-related infant mortality disparities. Her study is the first to engage community advisers and expectant parents in developing

a culturally adapted safe sleep intervention. She hypothesizes that the adapted intervention will have greater reach, fidelity, uptake and implementation than the existing safe sleep intervention in rural underserved communities.



Carolina Schinke, M.D. The focus of Schinke’s research is identifying disease pathways in multiple myeloma and possible targets for new therapies. Her project aims to provide new insights about a protein coding gene known as a disease promoter

in multiple myeloma. Understanding the molecular mechanisms that regulate multiple myeloma will help Schinke identify pathologic pathways that could lead to new therapeutic targets and treatments.

KL2 Awardees Reap Program’s Dividends

Tiffany Haynes, Ph.D., has secured \$2.6 million in NIH and other funding to support her research of mental health interventions in partnership with rural African-American churches. Haynes, who completed her KL2 in 2014, has explored the relationship between religious beliefs and attitudes about mental health service, leading to her development and testing of a faith-based behavioral intervention for rural African-American churches.

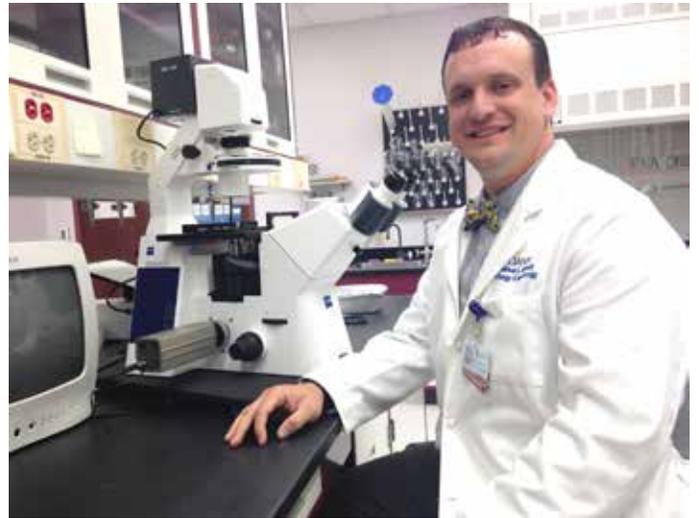


Tiffany Haynes Ph.D., (right) with community partners/co-investigators Anna Huff Davis and Calvin Woodridge.

“My KL2 work provided an opportunity to not only build my research skills, but establish relationships with stakeholders across the state.



Josh Kennedy, M.D., has received \$1.5 million in NIH and other funding to support his research since completing the KL2 program in 2015. His focus is on how allergies and rhinovirus infections (common colds) work in tandem to create life-threatening symptoms for people with asthma. He combines basic science – studying donated lung tissue in his lab, with clinical research – seeing patients who have critical asthma symptoms resulting from rhinovirus and allergies.



Josh Kennedy, M.D., in his lab at Arkansas Children’s Research Institute.

“Without the structure provided by the KL2 early in my career, I do not believe I would be in the same place today, working toward independent grant funding.



Taren Swindle, Ph.D., is using \$992,730 in NIH and other support to further her research addressing the poor diets of children in early care settings. A 2016 KL2 graduate, Swindle developed a framework for a childcare-based nutrition intervention and a strategy for implementing it. She is now testing the intervention strategy and its effect on child health outcomes.



Taren Swindle, Ph.D., with a HeadStart class that is part of her research addressing nutrition in early care settings.

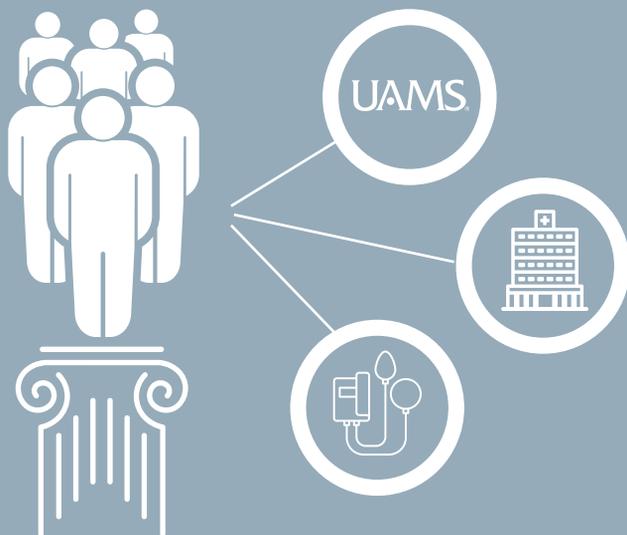
“The KL2 was critical in providing me the protected time and mentorship I needed to lay out a clear career path and design ways to advance along that path successfully.



Translational researchers

have the knowledge to apply their findings to address critical health needs.

In the past two years, 11 KL2 scholars received NIH grants totaling more than **\$12.4 million.**



Of the **18 scholars** who have completed the program since 2009, 11 remain as UAMS faculty active in research, five are faculty at other academic health centers, and two work in clinical practice.

Collectively, KL2 scholars have produced



271 publications

and have received 115 grants of ...



\$44.4 million,

including \$43.4 million in support outside UAMS.



Keeping the FAITH

KL2 Scholar Building Sustainable Model for Addressing Health Disparities



The FAITH Network, established by Keneshia Bryant-Moore, Ph.D., (third from left) depends on strong community connections. Key network members include (l-r) the Rev. Ulysses Washington, Joy Rockenbach, Cemeka Agugbuem Smith, director, Camille Hart, M.P.H., program coordinator, and the Rev. William Givens.

Keneshia Bryant-Moore, Ph.D., A.P.R.N., F.N.P.-B.C., hurried to campus one morning in 2016 after an idea came to her in a dream.

Two days ahead of the deadline, the 2011 KL2 Scholar Award graduate began writing a letter of intent to the Patient Centered Outcomes Research Institute (PCORI) about developing a network of faith leaders across Arkansas.

“It was like all the stars were aligning for me, and it was made possible by TRI.
– Keneshia Bryant-Moore, Ph.D., A.P.R.N., F.N.P.-B.C.



The idea had come as Bryant-Moore was considering how to sustain her faith-based approach to addressing depression and other health disparities for African-Americans. PCORI provided a \$250,000 Engagement Award to support

the project, the Faith-Academic Initiatives for Transforming Health (FAITH) Network, in 2016. Funding expired at the end of November 2018, but it will live on as a program under the nonprofit called Vine and Village.

Expanding Her Reach

She and her team are now working with researchers at the UAMS Northwest Regional Campus and the region’s Marshallese and Hispanic communities.

“Addressing health through the faith community is really important for both groups,” Bryant-Moore said.

PCORI has awarded an additional \$250,000 Engagement Award for training Marshallese and Hispanic faith leaders. She is among a handful of UAMS researchers with multiple PCORI awards, having received five dating to 2016.

National Recognition

The FAITH Network team became

the first in Arkansas selected to participate in the National Leadership Academy for the Public’s Health, an approach for transforming communities into healthier environments. The program is funded by the national Centers for Disease Control and Prevention.

In addition, her team was honored with a visit in 2018 by Stakeholder Health and national health leaders interested in innovative health programs such as the FAITH Network.

Bryant-Moore recalls that as she was beginning her two-year KL2 project, TRI provided her with a community contact in Blytheville who had an interest in addressing depression. What followed were introductions to numerous pastors in the Delta – her portal to the community – and future research collaborators.

“It was like all the stars were aligning for me, and it was made possible by TRI,” Bryant-Moore said.



Fred Prior, Ph.D., (center, seated) leads the CIRC team, whose members include (l-r) Meredith Zozus, Ph.D., Rick Owen, M.D., Anita Walden, M.S., Jaime Baldner, B.S., and Joe Sanford, M.D.

21st Century Science

Biomedical Informatics Has Starring Role in Translational Research

Practitioners of biomedical informatics at UAMS and elsewhere are harnessing huge datasets for precision medicine, fostering team science, and leading data intensive research programs.

“Biomedical informatics has become a foundation of 21st century science, and it is critical to translational research,” said Fred Prior, Ph.D., the 2015 inaugural chair of the Department of Biomedical Informatics.

Under his leadership, UAMS has built a nationally leading biomedical informatics program.

He directs TRI’s Comprehensive Informatics Resource Center (CIRC). The CIRC serves TRI’s mission as an informatics infrastructure, support and innovation service by integrating the expertise of the Department of Biomedical Informatics, College of Public Health, Arkansas Children’s Research Institute and

the Central Arkansas Veterans Healthcare System. The CIRC team provides informatics support for clinical trials and access to hospital-based medical records data. It also serves as a centralized informatics consultation service for clinical and translational researchers.

“We’re addressing unique informatics challenges and fertile opportunities for development, implementation and evaluation of interventions in rural health,” Prior said.

These efforts include:

- Leading an NCATS-funded effort to create national standards that will streamline submission to a single Institutional Review Board when multiple institutions participate in a research study.
- Establishing the U.S.’ first full curriculum in clinical research informatics, with certificate,

master’s and doctorate degrees.

- New research in cancer, opioids, and acute kidney injury that involve gathering de-identified clinical data from multiple CTSA institutions (see story, page 20).
- Working to establish new software that pulls de-identified clinical data from the electronic health record and puts it in a study database. UAMS is testing the software to ensure that it improves data quality and is more efficient.

Prior is also principal investigator of the NIH National Cancer Institute (NCI)-supported Cancer Imaging Archive, an area of distinction for UAMS. The open-source collection of cancer-specific medical images and metadata is available to researchers, educators and the general public.



Lawrence Cornett, Ph.D., (center) led a UAMS effort to fund opioids-related pilot studies. Recipients of the pilot funding included (standing, l-r) Corey Hayes, Pharm.D., Johnathan Goree, M.D., Ronald Thompson Jr., Ph.D., and Linda Larson-Prior, Ph.D.

Doing Our Part

UAMS Helps Researchers Tackle Opioid Crisis

UAMS leaders have made opioids and pain management research a priority in recent years, answering the urgent call from the public and national leaders.

The NIH launched HEAL (Helping to End Addiction Long-term) in 2018 to focus on two critical areas: improving treatments for opioid misuse and addiction, and finding non-opioid approaches to pain management. NCATS has a key role with its Clinical and Translational Science Awards (CTSA) Program institutions across the U.S.

“Translational research institutions like ours are uniquely positioned to quickly tackle society-level challenges like the opioid epidemic,” said UAMS Chancellor Cam Patterson, M.D., MBA.

UAMS-Supported Opioid Research Studies

TRI is providing administrative support for an opioid-specific pilot award program, an initiative funded by institutional funds leveraged by Lawrence Cornett, Ph.D., associate vice chancellor for research.

“Arkansas has the second-highest prescribing rate in the U.S., so we’re among the states most affected by the opioid epidemic,” Cornett said. “It’s important that UAMS rises to the challenge, and research will play a critical role.”

Approving the pilot initiative was one of Patterson’s first official acts as chancellor.

Six research teams received one-year awards of up to \$25,000, helping provide important preliminary data to compete for HEAL funding opportunities. The principal investigators and project titles are:

- Johnathan Goree, M.D., “Video-based, Patient-Focused Opioid Education in the Perioperative Period: A Feasibility Study.”
- Corey Hayes, Pharm.D., M.P.H., “Linking the Arkansas Prescription Drug Monitoring Program Data with the Arkansas All-Payer Claims Database.”

- Linda Larson-Prior, Ph.D., “Impact of Buprenorphine-Assisted Treatment on Sleep, Mood and Cognition among Opioid Use Disorder Patients.”
- Issam Makhoul, M.D., “The Development and Implementation of a Standardized Pain Management Protocol for Adult Sickle Cell Patients.”
- Clare Nesmith, M.D., “Quantitation of Opioids in Neonates with Neonatal Opioid Withdrawal.”
- Alison Oliveto, Ph.D., and Ronald Thompson Jr., Ph.D., “Gamified Intervention to Prevent Adolescent Opioid Misuse.”

UAMS will host a presentation of their findings by early winter 2020.

TRI is also funding opioid studies through its Inter-Institutional Pilot Award program, and pilot awards in Biomedical Informatics, Implementation Science, and its KL2 Scholar Award program.

New Opioid Prescribing Tool

TRI’s Biomedical Informatics Pilot Awards in 2017 included one to Bradley Martin, Ph.D., Pharm.D., who leveraged de-identified clinical data to develop a tool to identify people susceptible to opioid addiction before the first opioid prescription is written. Exclusive rights to the tool have been acquired by TrestleTree, LLC, a Harvard Pilgrim company.

Martin also received an Inter-Institutional Pilot Award in 2018 for a collaboration with University of Utah researchers using state insurance claims databases to analyze early care decisions and the risk of long-term opioid use in patients with low back pain.



Translational research institutions like ours are uniquely positioned to quickly tackle society-level challenges like the opioid epidemic.”
– Cam Patterson, M.D., MBA,
UAMS Chancellor

Separately, he is working on a TRI-supported multi-site opioid study with collaborators in a CTSA informatics consortium (see story, page 20).

A 2018 Inter-Institutional Pilot Award to Jessica Coker, M.D., addresses opioid use disorders in pregnant women in collaboration with the universities of Kentucky, Utah and New Mexico Health Sciences Center. The study is testing the effectiveness of an iPad-based patient-centered data collection tool that can be used easily in a clinic setting.

“Researchers must reach across traditional discipline lines in their search for novel solutions.”
– Associate Vice Chancellor for Research Lawrence Cornett, Ph.D.



Using a 2018 TRI Implementation Science Pilot Award, Benjamin Teeter, Ph.D., is testing strategies that help local pharmacies provide potentially life-saving naloxone to people at risk of opioid overdose. Few pharmacies are taking advantage of an Arkansas law allowing them to dispense naloxone, which counters the

effects of opioid overdose. Following successful pilot testing in two pharmacies, he hopes to expand the effort to 29 locations.

Using her KL2 Scholar Award funding, Lisa Brents, Ph.D., is investigating ways to reduce neonatal opioid withdrawal severity by developing new treatments for pregnant women with opioid use disorder (see story, page 5).



Researchers Alison Oliveto, Ph.D., and Peter Crooks, Ph.D., D.Sc., at the Showcase of Medical Discoveries.

Showcasing Opioid Research

To facilitate opioids knowledge sharing, TRI co-sponsored the opioids-themed UAMS Showcase of Medical Discoveries in November 2018.

Hosted by the Office of Vice Chancellor for Research, the event brought researchers from UAMS, Arkansas Children’s Research Institute and Central Arkansas Veterans Healthcare System. The poster presentations were by researchers in pharmacy, psychology, psychiatry, pain management, physical therapy, biomedical informatics, palliative care, geriatrics, OB/GYN, general medicine and more.

“Turning the tide on the opioid crisis won’t happen in a vacuum,” Cornett said. “Researchers must reach across traditional discipline lines in their search for novel solutions.”



Arkansas ranks **second** nationally for its opioid prescribing rate.



The U.S. recorded **130-plus** deaths per day from opioid-related drug overdoses in 2017 and 2018.



Students in the Little Rock School District's Excel Program were the first high school students to graduate from the Community Scientist Academy.

MODEL Students

Community Scientist Academy Grooms Future Partners

Shanell Young, a senior at Little Rock Parkview, wasn't sure what to expect during the spring 2019 TRI Community Scientist Academy. After receiving her graduation certificate at a UAMS ceremony, she went to the lectern to share her takeaways.

"What people actually refer to as research nowadays is really just googling," she said. "After 10 weeks of participating in the Community Scientist Academy, we definitely feel different now. Research is not just googling."

Young's fellow graduates - the first high school students to attend the academy - came from across the Little Rock School District as Excel students in the Advanced Medical Sciences Program.

The academy, which held its first class in 2016, has graduated 81 community members. It will continue its focus on adult participants, although TRI hopes to continue its partnership with the school district.

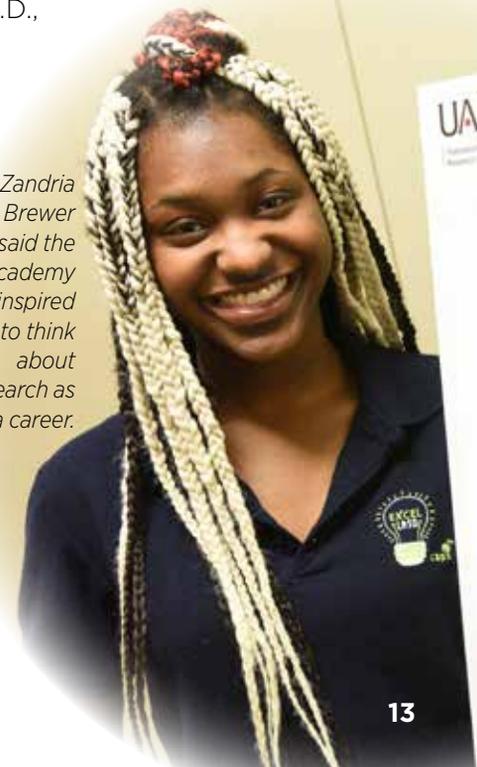
TRI established the academy on the recommendation of its Community Advisory Board. Its purpose is to increase community understanding about the research process and offer research decision-making opportunities to communities, patients and other stakeholders. These opportunities include reviewing grant applications (see story, page 16); advising on research projects; serving on community review boards, community advisory boards, and patient and family advisory councils; and assisting with ARresearch (see story, page 17).

"I learned a lot from this class," said J.A. Young of Little Rock, a fall 2018 graduate. "There's probably six or seven (volunteer participant opportunities) that I checked off the list that I would be interested in."

The academy has become the primary supplier of volunteers for helping review TRI pilot award grant applications, a new TRI program that puts community members at the table with faculty reviewers.

"Our goal with the academy is to educate the community and show them how they can help lead our research," said Kate Stewart, M.D., M.P.H., who leads TRI's Community Engagement program. "We have really started to see the fruits of these efforts in just the last year."

Zandria Brewer said the academy has inspired her to think about research as a career.



Seeding TRANSLATIONAL RESEARCH

TRI Pilot Awards Steer Research to Priority Areas



Jessica Coker, M.D., (far right) and Clare Nesmith, M.D., (third from right) meet with pregnant women and new mothers with opioid use disorder. Both are using TRI pilot awards to conduct opioid-related research.

By design, pilot awards are small but vital. They help researchers pursue their ideas and gather preliminary data to secure larger awards. The TRI Pilot Award Program uses its funding to encourage translational research that improves the lives of all Arkansans.

Awards of up to \$50,000 are provided in four focus areas: rural and underrepresented populations,

implementation science, biomedical informatics and community-partnered research.

“Our Pilot Award Program is directly aligned with TRI’s mission, helping address the complex health challenges of Arkansas’ rural and underrepresented populations,” said Donald Mock, M.D., Ph.D., director of the program.

TRI also provides Inter-Institutional Pilot Awards to encourage multi-site collaborative research with other CTSA sites that have populations and health challenges similar to those in Arkansas. In these awards, each collaborating institution provides \$25,000 for its researcher's contributions.

Implementation Science Pilot Awards

In 2018, TRI funded four Implementation Science Pilot Awards:

Pearl McElfish, Ph.D., MBA. Her research in Northwest Arkansas is testing the implementation of an education model to help Marshallese families reduce diabetes, a condition affecting about 50 percent of adult Marshallese. McElfish's pilot included working with 20 families in a local clinic to gauge feasibility of broader implementation of the model. Publication of study results were expected in spring 2019, along with plans to apply for NIH funding.

Benjamin Teeter, Ph.D. His research is testing strategies that help local pharmacies provide naloxone to people at risk of opioid overdose (see story, page 12).

Jeremy Thomas, Pharm.D. He is researching how to bring clinical pharmacist expertise to rural clinics. His project addresses a critical need for patients at high risk of complications and adverse drug interactions. Working with two clinics in eastern Arkansas, he has been testing implementation strategies for providing clinical pharmacy services using video conferencing via telehealth.

Kristin Zorn, M.D. Her research is intended to help ensure patients at high risk for hereditary cancer syndromes get referred for genetic counseling and testing. An automated alert in the UAMS medical record system now goes to Winthrop P. Rockefeller

Cancer Institute oncology clinics when a patient should be referred to a genetic counselor. Her plan also includes improving workflow for those referrals by creating a medical assistant position to review referrals and schedule patients to see the appropriate providers.

Inter-Institutional Pilot Awards

TRI awarded two Inter-Institutional Pilot Awards in Spring 2018. This pilot program is a collaboration with four other CTSA sites; University of New Mexico, University of Utah, University of Kansas, and University of Kentucky.

Jessica Coker, M.D. She is testing a new, easier method of data collection to benefit future studies that compare treatment interventions for pregnant women with opioid use disorders. (see story, page 12)

Bradley Martin, Pharm.D., Ph.D. His collaborative research is leveraging big data to better understand the opioid epidemic. Using de-identified records of publicly and privately insured patients who sought medical service, he has analyzed the early care decisions and the risk of long-term opioid use in patients with low back pain.

TRI awarded one Inter-Institutional Pilot Award in fall 2018:

Richard Dennis, Ph.D. The goal of Richard's project is a more effective exercise model for preventing age-related muscle loss. The pilot will enable a close look at the cellular reactions surrounding protein aggregation - damaged proteins that clump together. The goal is to better understand the relationship between protein aggregation and resistance exercise training.



TRI pilot awards totaling **\$4.6 million** have been used by UAMS researchers to secure **\$42.4 million** in additional funding from outside sources.

What is Implementation Science?

The study of methods to increase the uptake of research findings and other evidence-based practices into routine clinical care to improve health.

A Seat at the Table

Community Reviewers Help TRI Choose Pilot Grant Recipients



TRI's Nia Indelicato, M.N.O., (back row, third from left) met this year with the CTSA External Reviewer Exchange Consortium at the University of Southern California, Los Angeles, where attendees shared best practices and discussed ways to improve strategies for involving the community in pilot grant program management.

TRI is breaking new ground with its unique strategy for putting community members on equal footing with the scientific reviewers who decide which grant applications to fund. Its multi-faceted program for making research understandable to nonscientist reviewers sets it apart from other institutions.

One of its key components is the Community Scientist Academy (see story, page 13), which serves as a feeder program for community reviewers.

TRI's 18 community reviewers are academy graduates.

Other important program elements include:

- Training geared to nonscientists to guide them through the grant review process.
- Development of plain-language materials for community reviewer trainees.
- A requirement that grant applicants produce short videos of themselves explaining their proposed research in plain language.
- Giving equal weight to community and scientific reviewers' grant scores.

"The degree of community input and the tools we have developed to facilitate that input are unique," said TRI Director Laura James, M.D. "You know

you have created something special when other programs want to copy you."

Community reviewers have participated in four reviews of TRI pilot awards dating to 2015, with three scheduled in 2019.

TRI, along with four other research institutions, will formally test its reviewer program to determine if it can be replicated more broadly. NCATS has provided \$100,800 for a one-year study.

The other participating institutions are Ohio State University, University of Southern California, University of California, Irvine, and Virginia Commonwealth University.

The community reviewers will be involved in decisions on pilot award funding - grants designed to help researchers build a case for larger grants to expand the scope of their research.



TRI's multi-faceted program for making research understandable to nonscientist reviewers sets it apart from other institutions.



Barrier Breaker

ARresearch Delivers for Researchers, Volunteers

Jean McSweeney, Ph.D., R.N., helps add a potential research volunteer to the ARresearch.org registry during a spring 2019 Arkansas Travelers game.

Nathaniel Noble joined the ARresearch.org registry after hearing about it at a Little Rock Rotary Club luncheon.

Jean McSweeney, Ph.D., R.N., who leads TRI's participant recruitment efforts, had just spoken to the group, inspiring Noble to join.

He found ARresearch.org and checked the "Healthy Volunteer" option on the registry form. Soon he received an email from UAMS asking if he would be interested in participating in a UAMS kidney research study.

"It hit home because my dad was on dialysis the last years of his life," Noble said. "I felt that I needed to do my part so maybe someone else's dad won't have to go through the same experience."

TRI established the ARresearch registry to help researchers find volunteer participants. In addition to numerous media promotions, TRI staff have attended 109 events around Arkansas to educate the public about ARresearch.

 By April 2019, the three-year anniversary of ARresearch, nearly **6,000** Arkansans had joined the registry.

By April 2019, the three-year anniversary of ARresearch, nearly 6,000 Arkansans had joined the registry.

The pool of registrants also reflects Arkansas' diverse population, a point of pride for McSweeney.

"Our recruitment committee chooses events that help us ensure we have strong diversity, representing all races and ethnicities in our state," said McSweeney, associate dean for research in the College of Nursing.

The registry promotion efforts also benefit from partnerships with

organizations like the Arkansas Minority Health Commission, the Tri-County Rural Health Network and the Hispanic Women's Organization of Arkansas.

"Giving everyone a chance to participate in research ensures that TRI is responding to the health challenges of Arkansas," she said.

The registry has become a fruitful free resource for UAMS researchers like Keith Bush, Ph.D., who has two studies that need 121 participants total.

"I'm finding people for my studies with very low effort, which is kind of the dream," Bush said.



Giving everyone a chance to participate in research ensures that TRI is responding to the health challenges of Arkansas." – Jean McSweeney, Ph.D., R.N.



With the TRI CTIU team behind her, Carolyn Mehaffey, M.D., was able to lead her first clinical trial.

Service Oriented

CTIU Makes Clinical Trials Easy

When Andrew Burrow, M.D., arrived at UAMS in 2016 from the University of Cincinnati, he was relieved to find TRI and its Clinical Trials Innovation Unit (CTIU). Burrow sees great potential for new treatments of

patients with a group of rare inherited conditions known as lysosomal storage diseases. In just two years, the CTIU has helped him open five clinical trials.



“We’re finding newer, better treatments that will be more effective, safer and easier to administer,” he said. “TRI has really impressed me in their ability to effectively handle all of the stages of a clinical trial. They have made my life very, very easy.”

Great for New Researchers

The CTIU serves as a liaison between researchers at UAMS, other institutions and industry sponsors. It provides support for all types of human-based research studies, including high-quality multisite studies, and it streamlines the startup process.

Researchers leading their first clinical trials find the CTIU especially helpful.

Carolyn Mehaffey, M.D., a UAMS neurologist, likely wouldn’t be leading a clinical study without the CTIU’s help.

“This is my first clinical trial as a principal investigator, and the TRI has walked me step-by-step through this process,” Mehaffey said of the multisite study of a drug used for multiple sclerosis. “I definitely could not have done it without their support.”

Comprehensive Expertise

The CTIU includes teams in the following service areas:

- Research Finance, with expertise in Medicare coverage guidelines, budget development, and negotiations. It facilitates the efficient startup of financially sound, fiscally compliant clinical trials. It also helps estimate costs for investigators initiating their own studies and submitting grant applications.
- Regulatory Affairs, responsible for shepherding studies through the initial regulatory approval processes, maintaining essential study

documents, and preparing annual reports to ensure that regulatory approvals remain in good standing.

- Clinical Research Nurses and Study Coordinators, working with the principal investigators, they help develop recruitment plans for study participants, collect information during study visits, and ensure the research procedures are conducted correctly.

The CTIU also works closely with the UAMS legal team for research contracts and institutional



TRI reduces the burden for investigators in addressing the many legal, regulatory, financial, safety and patient care issues that are part of a clinical trial.”

– David Avery, TRI Senior Director of Clinical Research

compliance offices. It coordinates research protocol submissions to central and local institutional review boards (IRBs), providing a single point of contact to enhance communication and reduce redundancy. Researchers can request the CTIU’s services via the TRI website or by contacting TRI directly.

	CY2016	CY2017	CY2018
# of New Studies Activated	11	12	23
# of Studies with Active Enrollment	12	18	26

TRI is increasing the number of clinical trials at UAMS through its affiliation with TriNetX, a federated clinical data network that links industry sponsored clinical trials to clinical researchers at academic institutions like UAMS. Since 2016, TRI has helped facilitate the startup of 15 clinical trials using this network.



The CTIU is supporting research studies led by **65** UAMS faculty from **28** departments in **four** colleges.

No Boundaries

TRI-Supported Program
Helps Researchers Harness
Electronic Health Records
Data



The AR-CDR team (l-r): Shariq Tariq, senior business intelligence analyst/developer; Mahanaz Syed, M.S., senior data warehouse analyst/developer; Shorab Syed, M.S., senior data warehouse analyst/developer; Ahmad Baghal, M.D., director, AR-CDR; Kim Gates, project manager; Shaymaa Al-Shukri, Ph.D., business intelligence analyst/developer; Annu Kumari, M.S., data quality analyst.

The development of electronic health records provides a data-research platform for research exploration. UAMS' first significant foray into research based on electronic patient data began in 2011 with new state-of-the-art methods for providing researchers "clean" de-identified patient data.

Called the data warehouse, its creation received significant support from TRI and the Department of Biomedical Informatics in the UAMS College of Medicine. It endures today as the Arkansas Clinical Data Repository (AR-CDR). The program's team, led by Ahmad Baghal, M.D., continues to improve researchers' access to clinical data at UAMS and is expanding electronic health research collaborations with academic medical centers outside Arkansas.

TRI has helped lead the creation of a data sharing consortium with its sister CTSA-funded institutions. Called the Southeastern Shared Health Research Informatics

Network (SE-SHRINE), the consortium also includes Medical University of South Carolina, University of Alabama, Birmingham, Emory University and the University of Kentucky. UAMS is participating in three multisite studies:

- A study by John Arthur, M.D., Ph.D., is assessing why the mortality rate for patients with dialysis-dependent acute kidney injury is nearly 40 percent.
- Bradley Martin, Pharm.D., Ph.D., is collaborating on a study of the consequences of reducing or stopping opioid prescriptions.
- Brendan Stack, M.D., is using the multisite datasets to test his clinical observation of a possible link between breast cancer and thyroid cancer.

The AR-CDR team is also increasing access to electronic health record data so that researchers can plan studies that match the health characteristics of UAMS patients. This enables

researchers to develop research hypotheses and design studies that are more feasible and more likely to meet enrollment goals. In addition, affiliation with commercial and federal data networks are expanding TRI's local capacity for research. These affiliates include:

- TriNetX, a worldwide federated clinical data network of health care institutions with more than 300 million patients represented.
- Accrual to Clinical Trials (ACTs), a CTSA-initiated nationwide network of 32 sites that contains electronic health records data on 100 million estimated total patients.

The AR-CDR team assisted with 100 researcher requests for data assistance in 2017 and 140 requests in 2018, helping design studies that address relevant health questions for Arkansas.

"We built the foundation, and now we have a one-stop data resource for investigators," Baghal said.



Kristie Hadden, Ph.D., meets with Chris Trudeau, J.D., at recent TRI planning retreat.

Center for Health Literacy Having National Impact

With TRI support dating to 2013, the Center for Health Literacy has become a national leader in addressing a critical barrier to improving health - the principal goal of translational research.

An example of its leadership is having made UAMS home to one of the largest known sets of patient health literacy screening data in the U.S. This feat stems from piloting a health literacy screening question in the UAMS electronic health record Epic, led by Center for Health Literacy Executive Director Kristie Hadden, Ph.D.

The center's Chris Trudeau, J.D., is also raising UAMS' profile, having been appointed in 2018 to the Roundtable on Health Literacy with the National Academies of Science, Engineering, and Medicine. Trudeau is a TRI-supported faculty member, and as a leading expert on health literacy, informed consent, and risk communication, he is frequently invited to speak and conduct seminars for national science and

health organizations and at other academic institutions.

The health literacy pilot results earned Best Poster from more than 200 entries at the 2017 International Conference on Communication in Healthcare/ Health Literacy Annual Research Conference. To date, more than 100,000 patients have been screened and the screening question was launched across UAMS' whole clinical enterprise in April 2019.

"In addition to point-of-care interventions to meet the immediate communication needs of patients with health literacy best practices, the screening

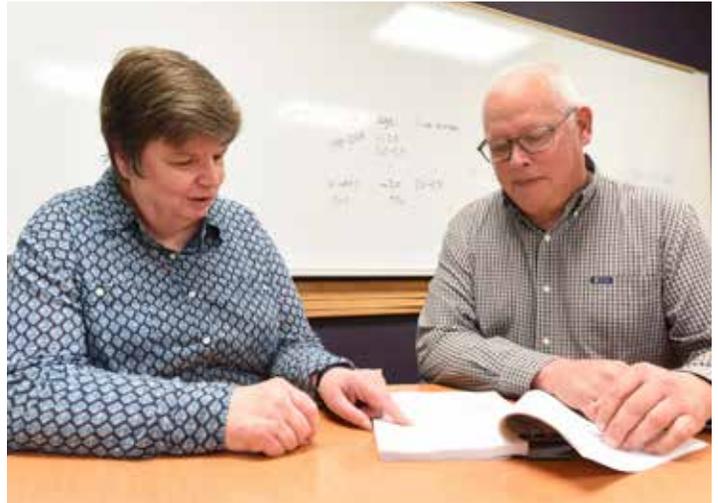
data can be used in research and quality improvement initiatives that aim to improve care and communication with our patients," Hadden said. For researchers trying to recruit and enroll participants in their studies, the center worked closely with the UAMS Institutional Review Board (IRB) to develop a plain-language template to receive participants' informed consent. This TRI-supported study found that using the template reduced the mean readability of informed consents from a 10th -plus grade to an 8th grade level. The template is available for researchers nationwide through IRB Advisors, an online medium.



Low health literacy impacts as many as **37 percent** of Arkansans, negatively affecting health outcomes.

Formula for Success

UAMS Biostatistics + TRI = Better Research



Paula Roberson, Ph.D., discusses a research project with Trey Spencer, M.S.

In an ideal world, all researchers would talk to a biostatistician before starting a study. Doing so improves the likelihood of funding, strengthens results and avoids common mistakes, like realizing too late that the sample size is too small.

Paula Roberson, Ph.D., and Trey Spencer, M.S., have

“I’ve provided consultations to more new researchers, especially as TRI has become more established.”
- Trey Spencer



seen such missteps a time or two. Together they have 67 years of experience as biostatisticians - most of it

at UAMS. Roberson is professor and chair of the department, and Spencer, a research associate, has received TRI support since its beginning in 2009.

Their forte, along with their 14 colleagues, is providing state-of-the-art experimental designs.

TRI helps support eight statisticians in Roberson’s department, and she is a member of TRI’s Leadership Council and director of TRI’s Biostatistics, Epidemiology and Research Design program, where she helps ensure interdisciplinary and inter-institutional collaborations.

Spencer is collaborating on three inter-institutional CTSA consortium research projects related to chronic opioid use, acute kidney injury and breast cancer. The research teams include biomedical informaticists with expertise extracting de-identified patient data. Spencer’s analyses of that data helps

the teams determine the study cohorts - for example, using the data to define which patients have chronic opioid use.

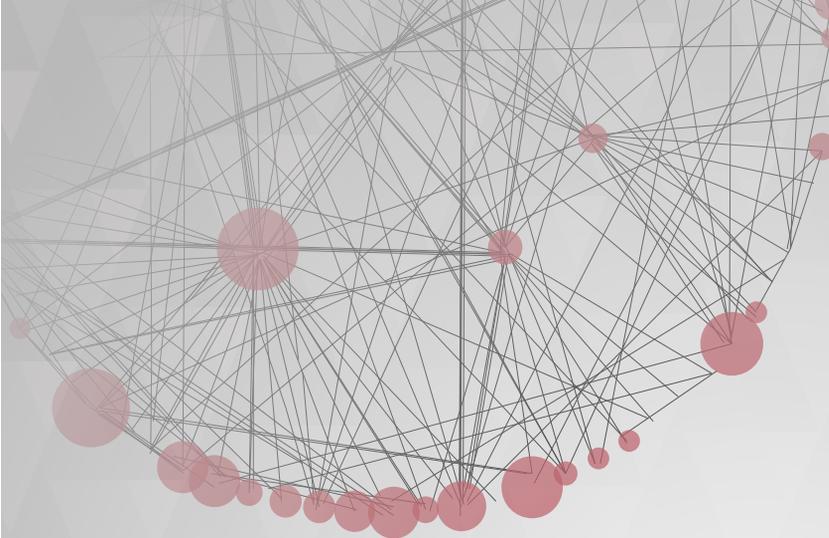
“It’s collaborative, and this is why the statistician needs to be brought in early so that they can be a part of those discussions,” Roberson said.

While a few researchers may bypass its expertise - at their own peril - the department has seen increasing requests for consultations. TRI has played a role, Roberson and Spencer said, by making it easier for researchers to find them.

“TRI has been particularly good at guiding them through the process,” she said.

In addition to its financial support, TRI has helped raise the department’s profile through the institute’s many programs, projects and communications efforts. Researchers conducting TRI-funded studies are also required to have a consultation with a biostatistician. The hope is that a collaborative relationship will continue through the researcher’s larger external grant applications and publications.

 Researchers have requested over **200** biostatistics consultations through the TRI Portal since 2016.



Networking Hub

TRI Hosts Site for Researchers to Find Collaborators

Sometimes finding the right research collaborators can seem like a frustrating scavenger hunt.



When Jennifer L. Vincenzo, Ph.D., M.P.H., P.T., needed collaborators, she turned to UAMS Profiles, an online researcher networking site hosted by TRI. The web-based tool gave her a key-word directory of all UAMS faculty, their research interests, publications, contact information, and illuminating interactive visualizations that show each faculty member's collaborations with other researchers.

Vincenzo's experience inspired a thank-you note to TRI from the UAMS Northwest Regional Campus-based researcher.

"Profiles enabled me to find someone with a specific research specialty," she said. "It was especially helpful with me being in Fayetteville and not having the ease of networking with people on the main campus in Little Rock."

Established at UAMS in 2015, Profiles (TRI.uams.edu/Profiles) was adopted from Harvard University as a



UAMS Profiles was adopted from Harvard University as a high

priority NCATS initiative to spur collaboration at local research institutions and beyond.

high priority NCATS initiative to spur collaboration at local campuses and beyond.

"I use it several times a month," said Robert E. McGehee, Ph.D., dean of the UAMS Graduate School and executive director of the Arkansas Biosciences Institute (ABI).



In his ABI role, McGehee helps build collaborations between UAMS, Arkansas Children's Research Institute, Arkansas State University, University of Arkansas, Fayetteville and University of Arkansas Division of Agriculture.

"I use it to identify faculty at UAMS and then connect them with collaborators at the other institutions," he said.

Profiles also helps him form interdisciplinary teams on dissertation advisory committees



Profiles enabled me to find someone with a specific research specialty."
- Jennifer L. Vincenzo, Ph.D., M.P.H., P.T.

and other committees. As a College of Medicine faculty member and UAMS Research Council member, he uses the platform to help facilitate UAMS collaborations.

Today nearly all CTSA institutions have Profiles or similar research networking programs. The Profiles Research Networking Software Users Group has more than 300 institutional members worldwide.

TRI works in partnership with the Department of Biomedical Informatics to manage Profiles and has regularly upgraded its functionality and ease of use.

On the FAST TRACK

TRI Helps Speed Research Growth at Northwest Campus



Pearl McElfish, Ph.D., (far left) addresses a group of pastors' spouses from the Marshallese community in Northwest Arkansas.

Starting from scratch only seven years ago, the UAMS Northwest Regional Campus has built a research enterprise that today is supported by more than \$15 million in grant funding. Two common

“This is all made possible through the support of TRI.”
– Pearl McElfish



denominators in its rapid success are Pearl McElfish, Ph.D., MBA, and the Translational Research Institute (TRI).

McElfish, who became vice chancellor for the UAMS Northwest Campus in 2018, gives much credit to TRI. With TRI support in 2013, the Northwest Campus began to build research capacity in the region and established its goal for developing a community-driven research agenda, particularly for underserved populations.

McElfish and her colleagues have continued to leverage TRI's support to achieve the campus' aims. Its research is supported by

multiple national public funding agencies and private foundations.

Among the campus' more than 50 studies are nationally recognized research programs on diabetes prevention and management, rural and minority health disparities, multilevel interventions, healthy food systems, and healthy environments. Researchers have also used TRI support to lead the study of new methods for returning research results back to research participants.

In 2015, McElfish founded the Center for Pacific Islander Health, the first research center in the country focused solely on Pacific Islander health. The center works with Pacific Islander communities across the U.S. and in the U.S.-affiliated Pacific Islands.

“TRI has provided critical support on pilot grant programs and assistance with biostatistics and community engagement programs,” said McElfish, who is also a member of TRI's Leadership Council. A recent TRI-supported study led a local school district to

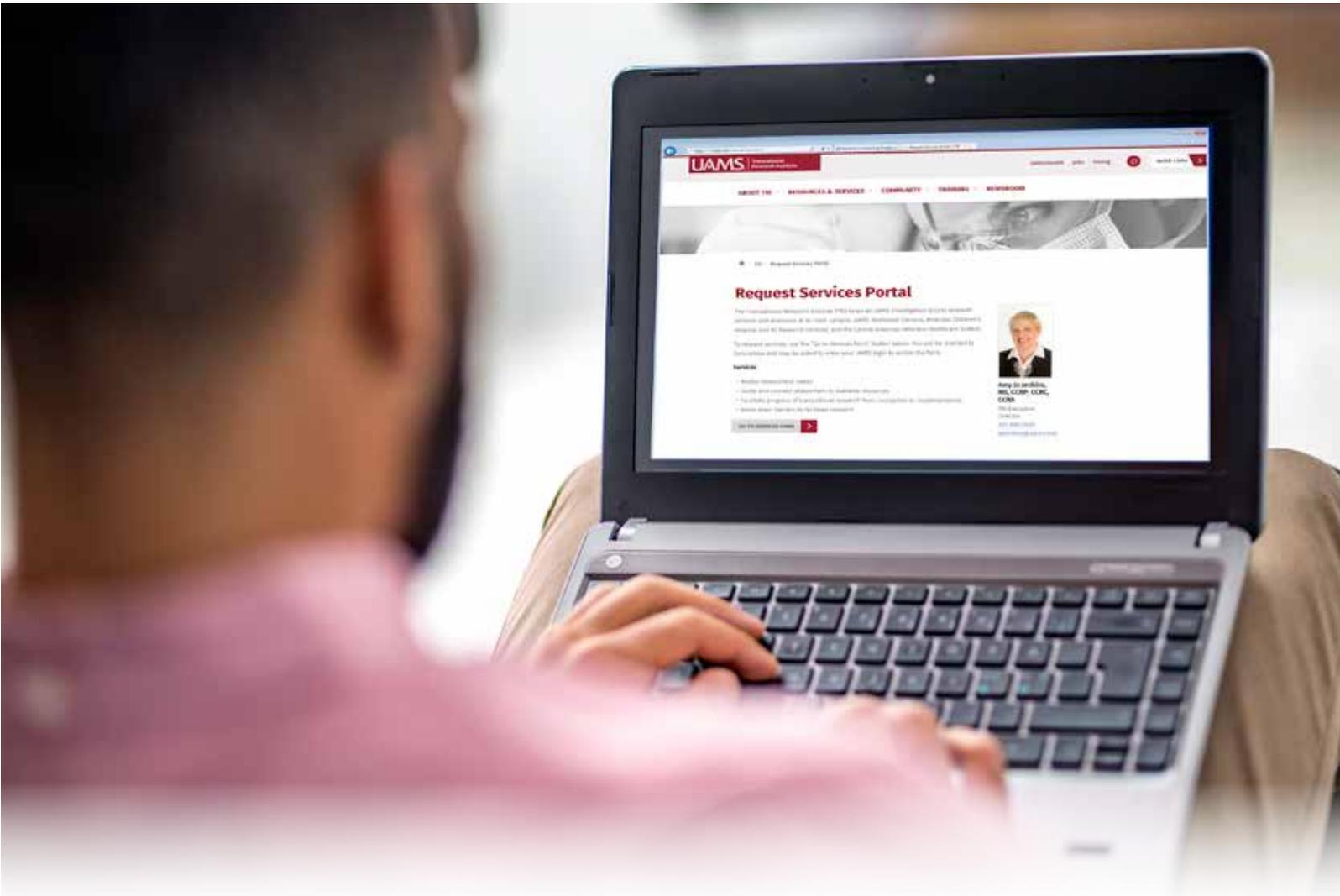
reduce the sodium content of its lunches by 11.2 percent, ensuring healthier meals for about 25,000 students.

The campus has also engaged more than 5,000 rural and minority participants in research and helped recruit rural and minority participants into TRI's research registries. The campus' translational research efforts also involve engaging more clinicians to expand research to include more minority participants.

“This is all made possible through the support of TRI,” McElfish said.



A recent TRI-supported study led a local school district to reduce the sodium content of its lunches by **11.2 percent**, ensuring healthier meals for about 25,000 students.



On the Menu

Thirty Research Resources Available via TRI Online Portal

TRI has streamlined access to research resources with its Request Services Portal on the TRI website.

The web-based service fielded 556 research-related

service requests from UAMS, ACRI and CAVHS researchers in 2018.

Top three requests:

- 1. Help with research study protocol development (129)
- 2. Access to Arkansas Clinical Data Repository (AR-CDR) (UAMS data warehouse) (116)
- 3. Biostatistics (study design) support (56)



640 publications have cited TRI for its assistance since 2009.



Appearing with Gov. Asa Hutchinson are research representatives from UAMS and Arkansas Children's Research Institute (l-r), Pamela Christie, Kristin Zorn, M.D., Clare Nesmith, M.D., Betty Fortner, Laura James, M.D., Sherry Courtney, M.D., Hutchinson, Barry Brady, Amy Jo Jenkins, Thomas Burrow, M.D., David Avery, Rohit Dhall, M.D., and Stacie Jones, M.D.

History Making

Governor, Participants Help UAMS, ACRI Celebrate Clinical Trials Day

Arkansas Gov. Asa Hutchinson this year officially recognized the importance of clinical trials in the development of new, life-saving treatments.

The governor signed a proclamation declaring May 20 Clinical Trials Day and hosted a photo opportunity at the state Capitol with research leaders from UAMS and Arkansas Children's Research Institute (ACRI).

Initiated by TRI, the proclamation includes a brief history of Clinical Trials Day, which celebrates the first randomized clinical trial – the famous study in 1747 that determined citrus fruit could prevent scurvy.

Clinical Trials Day is celebrated around the world, recognizing clinical research professionals and volunteer participants for their contributions to the medical advances achieved through clinical trials.

UAMS' celebration of Clinical Trials Day included information booths in its hospital lobby and Winthrop P. Rockefeller Cancer Institute lobby. Research staff from TRI, Cancer Clinical Trials and Regulatory Affairs office, and Office of Research Compliance handed out snacks, including citrus fruit, and provided information about clinical trials at UAMS. ACRI sponsored a similar event.

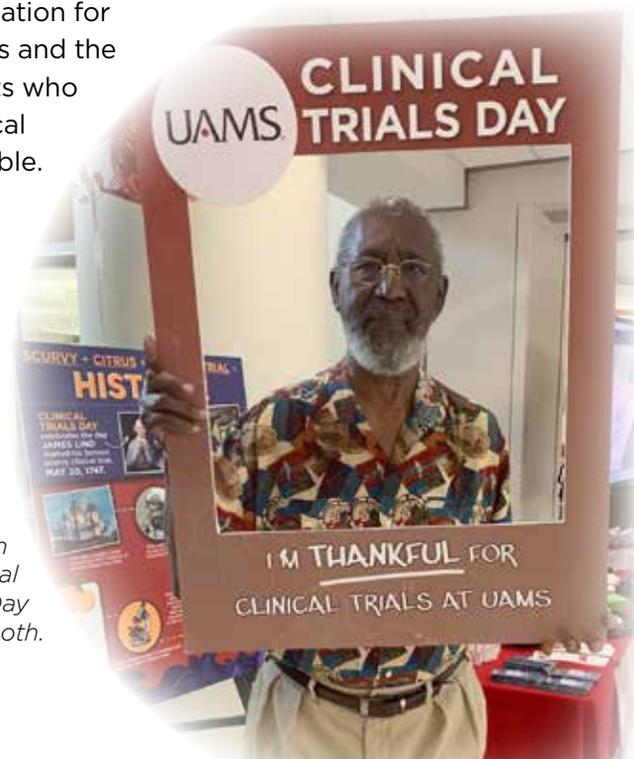
Research participants like John Kilgore also visited the UAMS booths to express their gratitude. Kilgore, recently completed a UAMS/TRI clinical trial that

helped his essential tremor, he said. The trial is testing a wearable device about the size of a large wristwatch.

"I could tell the difference after the first week," he said. "It hasn't completely eradicated the tremor, but it is significantly better."

UAMS Chancellor Cam Patterson, M.D., MBA, kicked off the Clinical Trials Day celebration in the hospital lobby, expressing his appreciation for researchers and the participants who make clinical trials possible.

John Kilgore, a research study participant, showed his appreciation at a Clinical Trials Day booth.



TRI LEADERSHIP

Laura James, M.D.

Principal Investigator and Director; Associate Vice Chancellor for Clinical and Translational Research, UAMS; Professor, Department of Pediatrics, College of Medicine

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

Associate Director; Local Medical Director, Trial Innovation Network Liaison Team; Professor, Department of Internal Medicine; Director, Division of Nephrology, College of Medicine

Amy Jo Jenkins, M.S., CCRP, CCRC, CCRA

Executive Director

Mary Aitken, M.D.

Co-Director, KL2 Scholar Program; Interim President, Arkansas Children's Research Institute; Professor, Department of Pediatrics, College of Medicine

Beatrice Boateng, Ph.D.

Director, Evaluation; Associate Professor, Department of Pediatrics, College of Medicine

Geoffrey Curran, Ph.D.

Director, Optional Module – Implementation Science; Professor, Department of Pharmacy Practice, College of Pharmacy; Research Health Scientist, Central Arkansas Veterans Healthcare System

W. Brooks Gentry, M.D.

Co-Director, KL2 Scholar Program; Professor, Department of Anesthesiology, College of Medicine

Teresa Hudson, Pharm.D., Ph.D.

Director, Collaboration and Multidisciplinary Team Science Program; Associate Professor, Department of Psychiatry, College of Medicine

Laura Hutchins, M.D.

Director, Participant and Clinical Interactions; Interim Director, Winthrop P. Rockefeller Cancer Institute; Professor, Department of Internal Medicine, Division of Hematology/Oncology, College of Medicine

Pearl McElfish, Ph.D., MBA

Director, Integrating Special Populations; Vice Chancellor, UAMS Northwest Regional Campus; Associate Professor, Department of Internal Medicine, College of Medicine

Jean McSweeney, Ph.D., R.N.

Director, Recruitment; Professor and Associate Dean for Research, College of Nursing

Donald M. Mock, M.D., Ph.D.

Director, Pilot Translational and Clinical Studies Program; Co-Director, Mock Study Section Program; Professor, Department of Biochemistry and Molecular Biology, and Department of Pediatrics, College of Medicine

Fred Prior, Ph.D.

Director, Informatics; Professor and Chair, Department of Biomedical Informatics, College of Medicine

Paula Roberson, Ph.D.

Director, Biostatistics, Epidemiology and Research Design; Professor and Chair, Department of Biostatistics, Colleges of Medicine and Public Health

Nancy Rusch, Ph.D.

Director, Translational Workforce Development; Professor and Chair, Department of Pharmacology and Toxicology, College of Medicine

Kate Stewart, M.D., M.P.H.

Director, Community Engagement; Professor, Health Policy and Management, College of Public Health

Christopher Trudeau, J.D.

Director, Regulatory Knowledge and Support; Associate Professor, University of Arkansas at Little Rock Bowen School of Law

TRI COMMUNITY ADVISORY BOARD

Emma Agnew

Retired, Jonesboro

Kent Broughton

Clinton School of Public Service, Little Rock

Deacon Walter Clanre

Jabe in Nebar Assembly of God, Springdale

Naomi Cottoms

*Executive Director, Tri-County Rural Health Network, Helena-West Helena**

Anna Huff Davis

Chair, Arkansas Community Health Workers Association, Marvell

Denise Donnell

Executive Director, Arkansas Human Rights Campaign, Little Rock

Nicole Hart

Rock Region Metro Board member, North Little Rock

Jim Miles

*Enroll the Ridge; Covenant Medical Benefits, Inc., Little Rock**

Charles Moore

Founder, Planting a Seed Foundation, Camden

Monte Payne

Better Community Development, Little Rock

Krystopher Stephens

Arkansas Transgender Equality Coalition and Jericho Way, Little Rock

Jenna Sullivan

Associate Pastor, Magnolia Road Church, Jonesboro

Pastor Yoshie Tobey

*King Chapel Church, Springdale**

Rev. Jerome Turner

Director, Special Projects, Boys, Girls, Adults Development Center; Pastor, Mt. Everett and New Hope Baptist Churches, Marvell

Sarah Facen

*Martin Luther King Neighborhood Association; UAMS Internal Medicine Advisory Board, Little Rock**

Steve Sullivan

*VA Chaplain; Clergy Coordinator, Rural Clergy Partnership Program, North Little Rock**

** These board members have rotated off effective March 2019.*

TRI EXTERNAL ADVISORY COMMITTEE 2018

Julian Solway, M.D.

University of Chicago Medicine, Chair

Timothy S. Carey, M.D., M.P.H.

University of North Carolina

Phil Kern, M.D.

University of Kentucky

Harold Lehmann, M.D., Ph.D.

Johns Hopkins University

George Mashhour, M.D.

University of Michigan

Timothy F Murphy, M.D.

University at Buffalo

Ron Sokol, M.D.

University of Colorado

Joel Tsevat, M.D.

University of Texas

