

## Rising Stars

### New Investigators Gain Footing With KL2 Awards



Recipients of TRI's KL2 Career Development Awards are (seated, l-r) Andrew James and Keneshia Bryant; (standing) Ling Gao, Elvin Price, Anthony Goudie, Joshua Kennedy, Dennis Kuo and Tiffany Haynes. Not pictured: Holly Felix, Brooke Montgomery and Karen McNiece Redwine.

When UAMS received the National Institutes of Health (NIH) Clinical and Translational Science Award (CTSA) in 2009, leadership moved quickly to invest in promising new researchers.

With the idea of "growing our own" researchers, the UAMS Translational Research Institute (TRI) has offered annual KL2 Career Development Awards, which provide salary support, research funds, and mentored training to junior investigators. Below are brief updates of the research being conducted by TRI's KL2 recipients:

#### 2009

##### **Holly Felix, Ph.D., M.P.A.**

In addition to studying the impact of obesity in long-term care, Holly Felix is getting traction with her evaluation of the Community Connector Program that links Medicaid-eligible, physically disabled adults and the elderly to long-term care services. Her KL2 helped her disseminate

earlier findings that the Community Connector Program could save Arkansas' Medicaid system \$2.6 million over three years. Funded by NIH, Felix is studying the program in 15 counties after Medicaid expanded it from three. She is also pursuing NIH funding to expand her study of obesity in long-term care.

#### 2010

##### **Dennis Kuo, M.D., M.H.S.**

Having set out to solve the complex care needs of patients at Arkansas Children's Hospital (ACH), Dennis Kuo is thinking big: "You have to redesign the health care system," he said. Now the principal investigator on two federally funded studies, his data-driven work is helping achieve better understanding of patients' health needs, family needs, and their health care use patterns. As a result, ACH is developing personal care teams, especially for those with special health care needs, and Kuo was recently tapped to lead the rollout of ACH's Patient-Centered Medical Home program.

*continued on page 2*

### Message from Dr. Beck



Dear Colleagues,

As we begin our sixth year as a Clinical and Translational Science Award (CTSA) recipient, we're excited to take stock of one of our signature programs –

the KL2 Career Development Program.

Since 2009, we've awarded KL2s to 13 promising new investigators, providing two years of salary and research support, research training and quality mentorship. This diverse group is studying a wide range of diseases and interventions using patient-centered approaches. Together they have produced 119 publications and more than \$10 million in new research funds.

They are also quickly becoming translational science leaders. Dennis Kuo, M.D., a 2010 recipient, is the principal investigator on two external grants and leading the rollout of the Patient-Centered Medical Home Program at Arkansas Children's Hospital. Elvin Price, Pharm.D., Ph.D., a 2013 recipient, is the first UAMS researcher to serve as an associate scientific advisor for the journal *Science Translational Medicine*.

On May 1, we initiated another cornerstone program – TRI's 2014 Pilot Award Program. These annual awards have proved to be a great investment in your research, and we're looking forward to seeing this year's crop of innovative proposals!

Cornelia Beck, Ph.D., R.N.  
Associate Director



KL2 Recipients (continued from cover)

## 2011

### **Keneshia Bryant, Ph.D., R.N., F.N.P.-B.C.**

Motivated by the patients she saw as a family nurse practitioner, Keneshia Bryant has used her KL2 to better understand the roles of ethnicity, culture and gender on depression. Her research is focused on addressing longstanding mental health barriers in rural African-American communities, including service infrastructure and stigma. She is pursuing funding for a faith-based stress management intervention that she developed with the community. Bryant is also co-principal investigator of a federally funded, community-based approach to reducing health disparities and co-investigator on two other mental health studies.

### **Ling Gao, M.D., Ph.D.**

Every Sunday, Ling Gao checks in by phone with her late-stage Merkel cell carcinoma patients. When the dermatologist and researcher recently discussed specific cases, she fought back tears, underscoring her resolve to find treatments for the rare, aggressive skin cancer. With no commercially available cell lines and limited resources, she has personally managed the challenging, daily pursuit of growing cells in her lab. Her reward is now within sight. Using tumor cells derived from her patients, she has identified potential therapeutic targets and will seek to publish her findings this year.

### **Andrew James, Ph.D.**

Using a functional MRI, Andrew James has analyzed the brains of 53 healthy adults, providing a suitable sample size for mapping brain function. The results are most striking in the different ways that healthy people use their brains to accomplish the same mental tasks. His results are being applied to better understand cognitive deficits in a broad range of psychiatric and neurologic illnesses. This foundation is essential to his epilepsy research and has led to new collaborations. He hopes that functional MRIs will one day inform medical decision-making.

### **Karen McNiece Redwine, M.D., M.P.H.**

Searching for ways to more effectively treat children with hypertension – one of the most prevalent chronic diseases in America with significant early morbidity – Karen McNiece Redwine used her KL2 to study the potential benefits of ambulatory blood pressure monitoring. She found that multiple blood pressure readings taken in patients' natural environments over an extended period resulted in changes to patients' medication regimen about 40 percent of the time. She presented the findings earlier this month at the Pediatric Academic Society in Vancouver.

## 2012

### **Anthony Goudie, Ph.D.**

Using national hospital databases, Anthony Goudie is searching for ways to improve hospital quality of care. His KL2 effort is focused on understanding the variation in rates of pediatric hospital-acquired infections such as *Clostridium difficile*. The challenge of producing apples-to-apples hospital comparisons prompted Goudie to develop a novel risk-adjustment algorithm that has been well received in his field. He has also identified common traits associated with hospitals with low infection rates. He hopes his findings will be used to develop fair incentives to help other pediatric hospitals improve their quality of care.

### **Tiffany Haynes, Ph.D.**

To address mental health disparities in underserved, rural African-Americans, Tiffany Haynes reached out to the strength of the community: Churches. Haynes, a clinical psychologist, has gathered qualitative data from church leaders, other members of the faith community and rural African-Americans to design interventions in which churches can play a key role in decreasing disparities. Haynes is also co-investigator on a Patient Centered Outcomes Research Institute (PCORI) grant that is addressing barriers to mental health care in underserved African-American communities.

### **Brooke EE Montgomery, Ph.D., M.P.H.**

Prior to her KL2, Brooke EE Montgomery, a behavioral scientist, was moved as female survivors of emotional, sexual and physical violence discussed

their struggles to find safe, healthy relationships with men. Motivated by their stories, she has used her KL2 to partner with shelters, treatment facilities and advocacy and policy groups to design a sexual health intervention program, and she is now recruiting women participants. Montgomery is also studying how violence against women may impact HIV risk behaviors as part of the national HIV Prevention Trials Network Scholars Program.

## 2013

### **Joshua Kennedy, M.D.**

As a new KL2 scholar, Joshua Kennedy, an allergy and immunology specialist, is excited to be part of an asthma research team that is conceiving innovative research techniques on a national scale. Using donated living lungs, Kennedy has presented preliminary findings that the airways of asthmatics react differently and perhaps more severely to the common cold than nonasthmatics. He and the team are now trying to tease out the cause of this sometimes fatal phenomenon. Human studies will come next, and Kennedy hopes their work will lead to treatment breakthroughs.

### **Elvin Price, Pharm.D., Ph.D.**

By targeting certain nuclear receptor genes, Elvin Price hopes to someday ensure that individual patients get the safest, most effective medicines for their particular condition. His KL2 has allowed him to focus on genetic associations with blood pressure, lipid and glucose levels. He has identified genes of interest in the lab and then analyzed them in patients. Having completed his first set of analyses of clinical data, Price is seeking to replicate the results in collaboration with the University of Michigan. He is also pursuing studies of treatment-related outcomes over time.

See chart on Page 3 for more information. Learn more about the KL2s at [TRI.uams.edu](http://TRI.uams.edu).

Note: Sundararaman Swaminathan, M.D., a 2010 recipient, is continuing his diabetes-related research at the University of Virginia, and Wang "Steve" Cheung, M.D., Ph.D., a 2009 recipient, is in private practice in Florida.



# TRIBUTARY

## TRI Award Helps Researcher Secure \$1.8 Million NCI Grant

A discovery that could lead to new treatments for gammaherpesviruses that infect more than 90 percent of the world's adult population has led to a \$1.8 million grant to UAMS from the National Cancer Institute (NCI) at the National Institutes of Health (NIH).

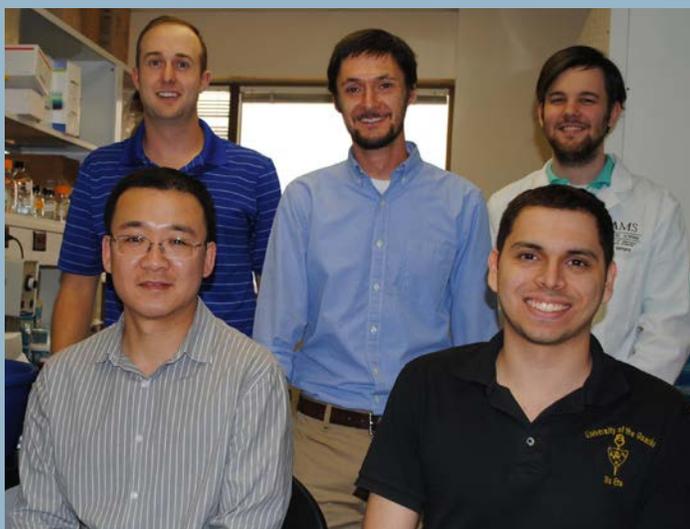
UAMS' Craig Forrest, Ph.D., the study's principal investigator, found that a certain protein (p53) may suppress gammaherpesviruses, such as Epstein-Barr virus, and possibly several cancers that are caused by the virus.

"This protein really appears to put the brakes on the virus from the start," said Forrest, an assistant professor in the Department of Microbiology and Immunology.

Forrest's early research was funded by the Arkansas Biosciences Institute, the Center of Biomedical Research Excellence (COBRE), and

a pilot study funded by the UAMS Translational Research Institute.

"We got some very unique data from the pilot study that led us to



Craig Forrest, Ph.D. (center), said his lab team was key to his discovery and obtaining the NCI grant. Seated, front (l-r) are Gang Li, Ph.D., postdoctoral researcher, and Eduardo Salinas, Ph.D. student; standing, Drew Stahl, Pharm.D. student, and Jeffrey Sifford, Ph.D. student.

test the function of p53 in chronic gammaherpesvirus infection," Forrest said. "We found that the protein is restricting the virus from

establishing a chronic infection."

The five-year NCI grant will allow Forrest and collaborating researchers to use innovative genetics techniques

to manipulate the virus and its genes as they test the (p53) protein, which is known for suppressing cancer.

He hopes his research will someday lead to new treatments.

While most people have a natural resistance to cancers caused by gammaherpesviruses, treatments could be lifesaving for those with weakened immune systems, including organ transplant patients, HIV/AIDS patients, and cancer patients undergoing chemotherapy.

Forrest, who is mentored by Usha Ponnappan, Ph.D., and Xuming Zhang, Ph.D., received a rare perfect score of 10 from NCI grant reviewers, who anticipate that his research "may reveal novel therapeutic targets."

### Adding it Up:

TRI's KL2s Have Produced 119 Publications and Over \$10 Million in New Research Funds

Name, Degree, Award Year	Project Title	Publications*	Grants as PI*
Holly Felix, Ph.D. (2009)	Impact of Obesity Among the Elderly on Long-Term Care	23	4
Dennis Kuo, M.D. (2010)	Building Tertiary-Primary Co-Management for Children with Medical Complexity	29	3
Keneshia Bryant, Ph.D. (2011)	Faith-Based and Community Views of Depressed African American Males	16	3
Ling Gao, M.D., Ph.D. (2011)	The Role of Keratin 20 in Mouse Epidermal Merkel Cell and Merkel Cell Carcinoma	8	2
Andrew James, Ph.D. (2011)	Predicting Treatment Response to Surgical Resection in Epilepsy with Functional Neuroimaging	7	1
Karen Redwine, M.D. (2011)	Improving Outcomes for Hypertensive Children	8	0
Anthony Goudie, Ph.D. (2012)	Identifying Systematic Barriers to the Translation of Best Practice Prevention Procedures for Reducing Pediatric Healthcare-Acquired Infections	6	1
Tiffany Haynes, Ph.D. (2012)	Improving Rural Mental Health Service Use through African American Churches	6	0
Brooke Montgomery, Ph.D. (2012)	Adapting and Testing an Evidence-Based Sexual Risk Reduction Intervention for Women Who Have Experienced Sexual Violence	6	0
Joshua Kennedy, M.D. (2013)	Protease Metabolism of IL-33 in Response to Rhinovirus Amplifies Allergic Inflammation	8	2
Elvin Price, Pharm.D., Ph.D. (2013)	Genetic Variation in Nuclear Receptor Genes Predict Cardiometabolomic Homeostasis	2	0

\*Includes publication and grant totals after receipt of KL2 Award


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The following UAMS researchers cited the Translational Research Institute (TRI) in publications between Feb. 12 and April 14, 2014, after utilizing TRI resources or funding:

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