

UAMS News Bureau

Office of Communications & Marketing
4301 West Markham # 890
Little Rock, AR 72205-7199

uamshealth.com/news



News Release

Oct. 26, 2021

Media Contacts:

Leslie W. Taylor, 501-686-8998

Wireless phone: 501-951-7260

leslie@uams.edu

Yavonda Chase, 501-686-8994

Wireless phone: 501-416-0354

yavonda@uams.edu

NCI Grant Supporting UAMS Research to Improve Cancer Treatment for Patients Lacking Good Gut Bacteria

LITTLE ROCK — A University of Arkansas for Medical Sciences (UAMS) research team will use a National Cancer Institute (NCI) grant to study promising new ways to improve the effectiveness of a common cancer treatment for patients lacking beneficial gut bacteria.

The five-year, nearly \$2 million grant is led by [Ruud P.M. Dings](#), Ph.D., M.Sc., an assistant professor in the UAMS College of Medicine Department of Radiation Oncology. The funding will support his goal to improve the effectiveness of cellular immunotherapy for melanoma, which works in only about 50% of patients. Cellular immunotherapy uses the cells of the body's immune system to fight cancer.

Cancer patients are susceptible to infections and are increasingly using antibiotics while undergoing cancer treatment. The antibiotics then disrupt their microbiomes, which Dings and his team found limits the ability of cancer-fighting white blood cells to reach the tumor. This happens because the lack of good bacteria reduces production of an adhesion molecule in the tumor's blood vessels that white blood cells need to reach the tumor. The findings were published in the journal [Cancer Research](#).

"We have already shown that we can actually improve the amount of white blood cells that infiltrate the tumor by using a drug that increases the amount of the adhesion molecules on the tumor vasculature," Dings said. "It is a boost to the immune system and provides a more robust anti-tumor response."

The research appears to be unique to UAMS. Dings said he knows of no other lab studying the changes in the tumor vasculature in the context of antibiotic-caused disruption of the microbiome.

"Currently only about 1% of white blood cells are infiltrating into the tumor during cellular immunotherapy, so we have a huge opportunity in front of us," Dings said. "We hope that in five years we will have an experimental drug to take into a phase one clinical trial."

Dings' project is an interdisciplinary collaboration with researchers at the UAMS Winthrop P. Rockefeller Cancer Institute:

- [Martin Cannon](#), Ph.D., professor, College of Medicine, Department of Microbiology and Immunology
- [Robert J. Griffin](#), Ph.D., professor, College of Medicine, Department of Radiation Oncology
- [Michael Robeson II](#), Ph.D., assistant professor, College of Medicine, Department of Biomedical Informatics
- Eric Siegel, M.Sc., UAMS Department of Biostatistics

The team also includes Kieng B. Vang, an immunologist at the University of Arkansas at Little Rock Center for Integrative Nanotechnology Sciences.

UAMS is the state's only health sciences university, with colleges of Medicine, Nursing, Pharmacy, Health Professions and Public Health; a graduate school; hospital; a main campus in Little Rock; a Northwest Arkansas regional campus in Fayetteville; a statewide network of regional campuses; and seven institutes: the Winthrop P. Rockefeller Cancer Institute, Jackson T. Stephens Spine & Neurosciences Institute, Harvey & Bernice Jones Eye Institute, Psychiatric Research Institute, Donald W. Reynolds Institute on Aging, Translational Research Institute and Institute for Digital Health & Innovation. UAMS includes UAMS Health, a statewide health system that encompasses all of UAMS' clinical enterprise including its hospital, regional clinics and clinics it operates or staffs in cooperation with other providers. UAMS is the only adult Level 1 trauma center in the state. *U.S. News & World Report* recognized UAMS Medical Center as a Best Hospital for 2021-22; ranked its ear, nose and throat program among the top 50 nationwide for the third year; and named five areas as high performing — colon cancer surgery, diabetes, hip replacement, knee replacement and stroke. *Forbes* magazine ranked UAMS as seventh in the nation on its Best Employers for Diversity list. UAMS also ranked in the top 30% nationwide on *Forbes'* Best Employers for Women list and was the only Arkansas employer included. UAMS has 2,876 students, 898 medical residents and six dental residents. It is the state's largest public employer with more than 10,000 employees, including 1,200 physicians who provide care to patients at UAMS, its regional campuses, Arkansas Children's, the VA Medical Center and Baptist Health. Visit www.uams.edu or www.uamshealth.com. Find us on [Facebook](#), [Twitter](#), [YouTube](#) or [Instagram](#).

Like us, we're social: 