

**UAMS News Bureau**

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

[uamshealth.com/news](http://uamshealth.com/news)



**News Release**  
**Feb. 25, 2026**

**Media Contacts:**

Leslie W. Taylor, 501-686-8998  
Wireless phone: 501-951-7260  
[leslie@uams.edu](mailto:leslie@uams.edu)

Yavonda Chase, 501-686-8994  
Wireless phone: 501-416-0354  
[yavonda@uams.edu](mailto:yavonda@uams.edu)

**UAMS Researcher Participates in \$2 Million Project  
Examining DNA Damage and Cancer Mutations**

LITTLE ROCK — Gunnar Boysen, Ph.D., associate professor in the University of Arkansas for Medical Sciences (UAMS) Fay W. Boozman College of Public Health Department of Environmental Health Sciences, is among a coalition of researchers assessing if damage in DNA happens on the same side that cancer mutations occur.

The study aims to find out if the places where DNA has damage also become a location where mutations develop. The “Virtual Consortium for Translational/Transdisciplinary Environmental Research (ViCTER)” planning study launched in February 2025 and will continue through January 2028. The National Institutes of Environmental Health Sciences has funded the project for \$2.2 million.

“Chemicals and radiation can damage our DNA,” said Boysen, who also is a member of the Cancer Prevention and Population Sciences research program in the Winthrop P. Rockefeller Cancer Institute. “When our cells try to copy this damaged DNA, mistakes — called mutations — can happen. Scientists have studied each part of this process, but no one has ever tracked both the original damage and the resulting mutations together, in the same system and at the exact same locations in the DNA.

“Our hope is that by connecting the dots between DNA damage and mutations, we can figure out which agents are actually causing harmful mutations — like those that lead to cancer, so we can avoid them,” he said.

This cancer prevention research is also a means to unite environmental health sciences researchers from different institutions who have not previously worked together.

In addition to UAMS, the University of California at San Diego and the University of South Florida are part of the consortium.

According to Boysen, the group fosters innovation and accelerates the translation of scientific research into meaningful improvements in human health. The coalition represents a new way to examine DNA in which researchers can see where damage happens and where mutations show up, down to the specific spot in the DNA.

## UAMS Researcher Participates in \$2 Million Project Examining DNA Damage and Cancer Mutations

Page 2

Boysen and his team at UAMS are responsible for determining the position of DNA modification and the binding of exposure to DNA.

“We’re the only group that can distinguish if the changes in DNA happen through epigenetic changes or through exposures,” Boysen said. “We’re going to look at the changes happening in cancer driver genes. This is important because when epigenetic drives mutation, we should do more prevention of epigenetic errors. When it’s exposure, we should do more prevention of exposures.”

Previously, there’s been a multitude of efforts to identify cancer mutations and mutations driving tumor development. This consortium is striving to bring clarity to a gap in the research.

“Chemical exposures can induce mutations,” Boysen said. “On the other hand, not all exposures can cause mutations, and you also have cancers without mutations. But there’s a small step in the process that’s unclear. Our lab developed a new technology where we can measure exposure on DNA before the mutations happen.

“Eventually, we hope to have targeted prevention strategies to keep damage and mutations from happening, to prevent tumors,” he added. “The basic results of this consortium will significantly expand our cancer prevention strategies.”

UAMS is the state’s only health sciences university, with colleges of Medicine, Nursing, Pharmacy, Health Professions and Public Health; a graduate school; a hospital; a main campus in Little Rock; a Northwest Arkansas regional campus in Fayetteville; a statewide network of regional campuses; and eight 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, Institute for Digital Health & Innovation and the Institute for Community Health Innovation. UAMS includes UAMS Health, a statewide health system that encompasses all of UAMS’ clinical enterprise. UAMS is the only adult Level 1 trauma center in the state. UAMS has 3,553 students and 902 medical residents and fellows. It is the state’s largest public employer with about 12,000 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](http://www.uams.edu) or [www.uamshealth.com](http://www.uamshealth.com). Find us on [Facebook](#), [X](#) (formerly Twitter), [YouTube](#) or [Instagram](#).

Like us, we’re social:    