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**NIH Awards Fund Promising Cancer Research
at UAMS Winthrop P. Rockefeller Cancer Institute**

LITTLE ROCK — Two researchers with the University of Arkansas for Medical Sciences (UAMS) Winthrop P. Rockefeller Cancer Institute have received National Institutes of Health (NIH) awards to support studies aimed at better understanding cancer and identifying new methods for prevention and treatment.

Brian Koss, Ph.D., received a five-year award for over \$2.9 million from the National Cancer Institute, and Joonas Jämsén, Ph.D., received a five-year award for over \$2.1 million from the National Institute of General Medical Sciences. Both Koss and Jämsén were recruited to and are members of the Winthrop P. Rockefeller Cancer Institute and assistant professors in the UAMS College of Medicine Department of Biochemistry & Molecular Biology.

“The achievements of Drs. Koss and Jämsén represent the innovative science we are working to support at the Winthrop P. Rockefeller Cancer Institute,” said Michael Birrer, M.D., Ph.D., UAMS vice chancellor and director of the Cancer Institute. “These highly competitive awards support research with the potential to deepen our understanding of the disease and improve cancer treatment.”

Brian Koss, Ph.D.

 Koss will serve as principal investigator for this new R01 award, studying a potential strategy for making adoptive T-cell therapy — a type of cellular immunotherapy — more effective for patients with solid tumors. T-cell therapy is an effective treatment for blood cancers, but in solid tumors the T cells become “exhausted” and lose their ability to kill cancer cells. This work will build on previous successful research for Koss and his lab.

As Arkansas’ first recipient of the NIH Director’s Early Independence Award, Koss joined the UAMS faculty in 2021 and used the funding for research that produced the preliminary data behind this current award.

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Sydney Shuttleworth, a graduate student in the UAMS College of Medicine and a full member of the Cancer Institute, received the highly competitive Ruth L. Kirschstein National Research Service Award in 2025 to study T-cell exhaustion under Koss' mentorship.

Together, their work identified an enzyme called RNF166 that may prevent T-cell exhaustion. This study is designed to determine how RNF166 prevents T-cell exhaustion and whether the enzyme can increase the ability of CAR T-cells (specially engineered T cells) to kill solid tumor cells and avoid exhaustion.

“This research could help more patients benefit from cellular immunotherapies by engineering therapeutic T cells that stay active and effective for longer, bringing us closer to treatment that works against difficult-to-treat solid tumors,” Koss said.

This is Koss' second active NIH award, reflecting the continued achievement of his lab.

This study is supported by the Winthrop P. Rockefeller Cancer Institute and the National Institutes of Health award 1R01CA315781-01.

Joonas Jämsén, Ph.D.

Jämsén's research focuses on uncovering how cellular repair mechanisms for the most serious form of DNA damage — a double-strand break — work and why the repair process sometimes fails, causing mutations and structural changes in chromosomes that lead to cancer.

In 2023, Jamsen and colleagues discovered a distinct repair pathway that reconnects broken DNA strands in cancer. Their research suggests that this mechanism may help some tumors survive when other repair pathways are impaired, potentially affecting treatment responses.

Jämsén received a NIH Pathway to Independence Award as a postdoctoral fellow supporting his research on DNA repair and was recruited to the UAMS Cancer Institute in 2022 from the National Institutes of Health.

Jämsén and his team will combine advanced imaging techniques, biochemical experiments, single molecule approaches, computer modeling, and molecular biology to understand DNA repair in exceptional detail.

“This research will advance our understanding of DNA repair in cancer and accelerate development of novel strategies for prevention and treatment of cancers and diseases caused by defective DNA repair.”

This study is supported by the Winthrop P. Rockefeller Cancer Institute and the National Institutes of Health award 1R35GM165917-01.

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 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 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 1,030 medical residents and fellows, and two dental residents. 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 or www.uamshealth.com. Find us on [Facebook](#), [X \(formerly Twitter\)](#), [YouTube](#) or [Instagram](#).

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