

UAMS News Bureau

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

uamshealth.com/news



News Release
Aug. 3, 2023

Media Contacts:

Andrea Peel, 501-686-8994
Wireless phone: 501-351-7903
andrea@uams.edu

Yavonda Chase, 501-686-8994
Wireless phone: 501-416-0354
yavonda@uams.edu

**UAMS' Michael Birrer, M.D., Ph.D., Contributes to Major
Ovarian Cancer Discovery; Findings Published in *Cell***

LITTLE ROCK — The Birrer Laboratory at the University of Arkansas for Medical Sciences (UAMS) [Winthrop P. Rockefeller Cancer Institute](#) helped discover a proteogenomic signature in ovarian cancer that may improve the way the disease is treated around the world.

The discovery, which identifies a 64-protein-gene signature that can predict primary treatment resistance in patients with high grade ovarian cancer, was published Aug. 3 in the [journal *Cell*](#).

Michael Birrer, M.D., Ph.D., director of the UAMS Winthrop P. Rockefeller Cancer Institute and UAMS vice chancellor, is a senior author on the *Cell* publication. Birrer, who was the co-principal investigator of the U01 grant from National Cancer Institute's Clinical Proteomic Tumor Analysis Consortium, has a laboratory dedicated to the translation of the genomics of ovarian cancer into better treatment of the disease.

Amanda Paulovich, M.D., Ph.D., physician-scientist at Fred Hutchinson Cancer Center and Birrer's co-author on the study, praised the UAMS team for its work.

"Mike's decades of experience treating ovarian cancer patients was crucial to ensuring that our project goals and design were crafted to meet the needs of patients with the most devastating form of this disease — platinum refractory ovarian cancers."

The Birrer Lab helped design, implement, analyze and interpret the results of the study and was critical in assuring the project had sufficient clinically annotated patient specimens for the state of the art proteomic/genomic analysis. The team characterized proteins and genetic markers in 242 high-grade serous ovarian cancers that responded or did not respond to treatment. The tumor samples were collected from patients before they began treatment.

The overall prognosis for women with high grade ovarian cancer is challenging, although the median survival rate has improved to five years. Unfortunately, patients with refractory tumors, those that do not respond to initial therapy, remains unchanged. These patients waste precious time going through initial treatments that do not work.

“Right now, we can’t identify these ovarian cancer patients up front. We find them by default: They get sick and pass away so quickly that they can’t even be put on new clinical trials,” said Birrer. “This study is a huge step forward in that.

“For the first time, we will know if a patient is unlikely to get better with standard treatment and make better recommendations for them to immediately explore other options like new therapeutics in clinical trials.”

Further, the study identifies five subgroups of refractory tumors by specific activated pathways, some of which may be targetable.

The study was led by Paulovich, Birrer and Pei Wang, Ph.D., professor of Genetics and Genomic Sciences at the Icahn School of Medicine in Mount Sinai, NY.

A former Harvard Medical School professor, Birrer joined UAMS in 2019 after directing the O’Neal Comprehensive Cancer Center at the University of Alabama in Birmingham. A New Jersey native, he completed his medical degree and doctor of philosophy degree in 1982 in the Medical Scientist Training Program at the Albert Einstein College of Medicine in New York. He served his internship and residency at Massachusetts General Hospital, where he realized cancer treatment and research were improving by leaps and bounds. Inspired, Birrer entered the Medical Oncology Fellowship Program at the National Cancer Institute in Bethesda, Maryland. He was appointed professor of medicine at the Harvard School of Medicine and was director of Gynecologic Medical Oncology at Massachusetts General Hospital and the Gynecologic Oncology Research Program at the Dana-Farber/Harvard Cancer Center.

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 Institute for Digital 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 3,240 students, 913 medical residents and fellows, and five dental residents. It is the state's largest public employer with more than 11,000 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](#).