

UAMS News Bureau

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**UAMS First in State
with Advanced Brain Surgery Planning System**

LITTLE ROCK — The University of Arkansas for Medical Sciences (UAMS) is home to the first neurosurgery program in the state with BrightMatter™, a surgical planning software for brain surgery.

The software helps brain surgeons protect important parts of the brain that control functions like the senses, movement, language and memory through planning and interaction with compatible real-time navigation systems during surgery.

As a result, surgeons may be able to operate on tumors in parts of the brain previously considered inoperable, while still preserving important functions, maximizing the amount of tumor removed, and minimizing hospital length of stay.

“This type of planning technology is known as tractography, which uses 3D modeling of MRI scans and computer-based diffusion tensor imaging to help the surgeon visualize the complex network of nerve tracts and critical structures of the brain,” said [J.D. Day](#), chair of the Department of Neurosurgery in the College of Medicine.





“It is complementary to our existing systems for the most ‘brain saving’ approach. From radiology, to planning, to every cut — we’re confident we offer the most accurate surgeries available with existing technologies,” Day said.

UAMS’ Department of Neurosurgery is also the first academic medical center program in the nation to receive the latest edition of the software, which UAMS surgeons began using in September.

The system is used primarily by Day and Director of Neurosurgical Oncology [Analiz Rodriguez](#), M.D., Ph.D. Day and Rodriguez see patients in the [Neurosurgery Clinic](#) at UAMS.

“By investing in the latest technology, our ultimate goal is to open new avenues and give our patients hope,” Rodriguez said. “In addition, advanced tractography has been shown to improve patient outcomes like length of stay and maximum tumor resection, which — especially for aggressive brain cancers like glioblastomas — correlates long-term with longer survival times.”

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. It is the only adult Level 1 trauma center in the state. *U.S. News & World Report* named UAMS Medical Center the state’s Best Hospital; ranked its ear, nose and throat program among the top 50 nationwide; and named six areas as high performing — cancer, colon cancer surgery, heart failure, hip replacement, knee replacement and lung cancer surgery. UAMS has 2,727 students, 870 medical residents and five 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 Hospital, the VA Medical Center and Baptist Health. Visit www.uams.edu or www.uamshealth.com. Find us on [Facebook](#), [Twitter](#), [YouTube](#) or [Instagram](#).

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