



Robotic Surgery at UAMS Forging New Paths in Patient Care

Surgeons at the **University of Arkansas for Medical Sciences (UAMS)** continue to forge new paths in patient care by using robotic technology, which adds precision and flexibility during procedures while being less invasive and speeding up recovery time.

As part of UAMS' strategic plan to make Arkansas the healthiest state in the region by 2029, the number of surgeons trained in robotics is steadily increasing, as are the number of robots available and the types of specialties in which they're used.



Luann Racher, M.D., an obstetrician and gynecologist who is interim chair of the UAMS robotics committee, said

there are now 24 certified robotic surgeons at UAMS — an increase of eight since 2022 — and five da Vinci Xi surgical robots.

It's been two years since Intuitive Surgical, maker of the da Vinci robotic systems that are used in more than 1,700 hospitals worldwide, designated UAMS as a da Vinci Epicenter. The company sends surgeons from across the



Hector Enrique Soriano-Baron, M.D., left, a neurosurgeon who is co-director of spine services at UAMS, stands between fifth-year surgical resident Ryan Turner, M.D., and a Globus Robotics Services screen depicting a patient's lumbar spine, on which they were about to perform the first robotic surgery in The Orthopaedic and Spine Hospital. The new surgical hospital opened on the UAMS campus in May.

world to the epicenters to learn best practices and techniques for success, under the guidance of highly skilled robotic surgeons.

At UAMS, robots are used in a growing number of specialties, including urology, gynecology, thoracic surgery, otolaryngology, colorectal surgery, general surgery, surgical oncology and interventional pulmonology.

Among its fleet of robots is the Ion Endoluminal Robotic Bronchoscopy system, which can detect and biopsy cancer nodules in even the farthest reaches of the lungs, greatly improving outcomes.

“The volume of robotic surgery at UAMS is at a steady increase, up 78% from last year, which also means open surgery is decreasing,” Racher said. “My goal is to virtually eliminate open benign gynecological surgery for women in Arkansas.”

To be sure, it's an exciting time for surgeons at UAMS — the state's only academic medical center — to be able to surgically explore areas of the body that were largely inaccessible before. But it's also a reassuring time for patients, who are surrounded as never before by the

WINTER 2024 Message from Dr. Krause



From left: Anna Asher, heart failure coordinator; Kalai Sivakumar, M.D., medical director of the UAMS Heart Restoration Program; Allison Doyle, RN; and Rhonda Robertson, financial counseling specialist. Between Sivakumar and Doyle is the Cardio-MEMS monitoring equipment.

UAMS Using Remote Monitoring System for Heart Failure Patients to Prevent Rehospitalizations

A new remote monitoring system for heart failure patients at the University of Arkansas for Medical Sciences (UAMS) has significantly reduced the need for rehospitalizations, to the delight of both patients and doctors.

Through the use of the CardioMEMS monitoring system, which detects potential problems and alerts doctors about them typically two to three weeks before patients would experience symptoms, “we have prevented at least 60 hospitalizations,” **Kalai Sivakumar, M.D.**, medical director of the UAMS Heart Restoration Program, said in January.

She said that since late 2022, when UAMS started using the system, 14 heart-failure patients have undergone a minimally invasive outpatient procedure to have a small sensor implanted in their pulmonary artery, and as a result, none have needed to return to the hospital.

That doesn’t mean none of them have experienced heart-failure related issues, which would eventually manifest in symptoms like shortness of breath, swelling of feet, ankles and legs, weight gain and tiredness. It means that, thanks to the remote monitoring system, Sivakumar has been able to adjust the patients’ medications before the issue becomes serious.

This not only benefits patients by minimizing further heart damage, but it also benefits the hospital by keeping

more bed space open for other patients.

The sensor, about the size of a paper clip, is positioned in the pulmonary artery through a catheter that Sivakumar guides through the patient’s body with the visual aid of a fluoroscope inserted into a vein through a small incision in the groin. The procedure occurs while the patient is under general anesthesia and takes about an hour.

The sensor remains in the artery permanently and is designed to last a lifetime. It doesn’t require a battery or have replaceable parts.

It detects intrathoracic pressure changes and stores the information, then transmits the information digitally to a secure website accessible by the patient’s care team. The patient simply lies back on a specially equipped “pillow” for about 30 seconds each night, or at least three to four times a week, to allow the device to transmit the data.

Even if the sensor doesn’t indicate a problem is developing, “we try to give them a call weekly to go over their numbers,” Sivakumar said.

Abbott, the distributor of the CardioMEMS Heart Failure System, says that typically, one in four patients return to the hospital within 30 days of a heart-failure hospitalization, but the technology reduces those readmissions by 78%. **To refer a patient to Sivakumar, call 501-686-5311**



Dear Colleagues, Now that we are past the busy holidays and have a little time to refocus, I would like to suggest that we turn our attention toward

something that can help us as well as our patients: annual wellness visits.

This period of reflection on the past year and looking ahead to the future is the perfect time for patients to check in with their health team and for us to assess where they are, physically and mentally, and whether any changes are needed in their lifestyle or medications.

As you know, preventive health screenings can detect serious illnesses before symptoms manifest, allowing us to significantly influence our patients’ risk for disease progression and complications.

A new year is also the perfect time to make sure patients are up-to-date on their vaccinations, to discuss any changes in their physical or mental health, and to schedule cancer screenings, while encouraging them to focus on health goals, and perhaps to bring us a list of stored-up questions and concerns.

And of course, annual wellness visits allow us to get to know our patients when they’re not ill or in need of medical attention, which in turn strengthens the doctor-patient relationship, allowing us to better track their changing health needs.

Wishing you and your patients the healthiest year ever,

Michelle Krause

Michelle Krause, M.D.
Senior Vice Chancellor, UAMS Health
CEO, UAMS Medical Center
Professor of Nephrology
Department of Internal Medicine
UAMS College of Medicine

News to Know: Updates from UAMS



UAMS Now Offering Kidney-Pancreas Transplants

UAMS, the only hospital in the state performing adult liver and kidney

transplants, now offers kidney-pancreas transplants as well.

Raj Patel, M.D., surgical director of pancreas transplantation at UAMS, completed the first combined kidney-pancreas transplant in Arkansas since the 1990s on Sept. 1. The 27-year-old patient was an insulin-dependent Type 1 diabetic on dialysis, and is now free of both insulin and dialysis.

The nearest centers for pancreas transplants and follow-up care were in Memphis, Dallas or St. Louis. The UAMS transplants are performed in Little Rock, with follow-up care available there and in Fayetteville, Jonesboro, Texarkana, Pine Bluff, Fort Smith and Helena-West Helena.

Medicare and Medicaid cover the procedure, for which Type 2 diabetics are the primary recipients. *To make a referral to Patel, a fellowship-trained transplant surgeon, call 800-552-8026.*

UAMS Again Receives Top Honors for Stroke Care

UAMS Again Receives Top Honors for Stroke Care

The UAMS Comprehensive Stroke Center has again been recognized by the American Heart Association and American Stroke Association for using the most up-to-date, evidence-based treatment guidelines to improve patient care and outcomes for stroke patients.

UAMS received the Get With The Guidelines Stroke Gold Plus Award for the ninth consecutive year; received Honor Roll Elite recognition in the Target: Stroke category for the third consecutive year and was placed on the Target: Top 2 Diabetes Honor Roll.

“This recurring achievement highlights our dedication to excellence in caring for stroke patients,” said Paige Womack, BSN, RN, director of the UAMS stroke program.



John Streitman, M.D., Leads UAMS Cardiovascular Surgery Program

John Edward Streitman, M.D., a

board-certified cardiac surgeon with a special interest in complex cardiovascular cases, has joined UAMS as an associate professor in the Department of Surgery, and is leading the cardiovascular surgery program.

Streitman came to UAMS from Methodist Le Bonheur Germantown Hospital in Memphis. He obtained his medical degree in 1999 from the University of Texas Health Science Center in San Antonio. He completed a thoracic and cardiovascular surgery residency at University of Florida Health in Gainesville, Florida, and a general surgery residency at Scott and White Memorial Hospital at the Texas A & M Health Science Center in Temple, Texas. *To refer a patient, call 501-603-1538.*



Radiation Oncologist Ciani Ellison, M.D., Joins UAMS

Ciani Ellison, M.D., a radiation oncologist

specializing in the treatment of pediatric cancers, has joined the Radiation Oncology Center at the UAMS Winthrop P. Rockefeller Cancer Institute. She is one of only two pediatric radiation oncologists in Arkansas, both of whom are at UAMS.

Ellison also treats adult patients with gynecologic cancers, soft tissue sarcomas and lymphoma/leukemia.

She is a graduate of the U.S. Air Force Academy, where she was a member of the parachute team and received a bachelor’s degree in biology. She earned her medical degree at the Medical College of Wisconsin in Milwaukee, where she also completed an internship in internal medicine and a residency in radiation oncology. *To refer a patient, call 501-664-4568.*

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Quiz of the Month

QUESTION

A 50-year-old patient presents with a history of intermittent burning sensation in the lower extremities. Physician examination is normal. Which is the most appropriate next step in evaluation?

- a. Therapeutic trial of vitamin B12
- b. Computed tomography of the lumbosacral spine
- c. Serum methylmalonic acid and homocysteine levels
- d. Bone marrow examination
- e. Electromyography and nerve conduction studies

News to Know: Updates from UAMS

(Continued from page 3)



Structural Heart Specialist Muhammad Ali Zulqarnain, M.D., Joins UAMS
Muhammad Ali Zulqarnain, M.D.,

Zulqarnain, M.D., an interventional cardiologist and structural heart specialist, has joined the UAMS Division of Cardiology.

He is board-certified in cardiovascular disease, nuclear cardiology, hypertension, adult echocardiography, critical care echocardiography, critical care medicine and internal medicine.

He earned his medical degree from Shifa College of Medicine, Bahria University, in Islamabad, Pakistan, completed an internal medicine residency at Northeastern Ohio University College of Medicine and completed fellowships in critical care, cardiovascular disease, interventional cardiology and structural heart disease. He specializes in innovative percutaneous treatments for structural heart conditions and high-risk procedures using alternate access. *To refer a patient, call Rachel McBride, RN, at 501-214-2499 or fax 501-686-5935.*



S. Thomas Kang, M.D., Colorectal Surgeon, Joins UAMS

S. Thomas Kang, M.D., a fellowship-trained,

board-certified surgeon, has joined the UAMS Division of Colorectal Surgery as an assistant professor.

He treats patients with colon, rectal and anal cancers; offers colon cancer surveillance with colonoscopies; and performs minimally invasive laparoscopic and robotic assisted surgery.

Kang received his medical degree from Creighton University School of Medicine in Omaha, Nebraska; completed his residency in general surgery at TriHealth Good Samaritan Hospital in Cincinnati; and completed a colon and rectal surgery fellowship at the University of Alabama Birmingham. *To refer an adult patient, call 501-296-1200.*

ARresearch.org



Helping Connect Arkansans with UAMS Health Research

Arkansans have a simple way to participate in health-related studies. **ARresearch.org**, an online registry created by the UAMS Translational Research Institute, is available in Spanish and includes more than 8,500 Arkansans from all 75 counties. When filling out the form, registrants choose from 31 health interest areas, such as COVID-19, weight management, cancer, heart disease and a healthy volunteer option. Many studies, such as online surveys, do not require travel, and some are conducted at UAMS Regional Campuses. Compensation is provided in many. Study volunteers are crucial for helping researchers meet enrollment goals and improve the quality of their findings. Please spread the word to your patients and others.

For more information, visit ARresearch.org or contact ARresearch@UAMS.edu.

UAMS PHYSICIAN RECRUITMENT & PROVIDER PLACEMENT PROGRAM

The UAMS Physician Recruitment & Provider Placement Program

has a team of placement specialists dedicated to serving the recruitment needs of our partner communities, UAMS Regional Programs and UAMS faculty. Physician/Provider opportunities are available in many specialties throughout Arkansas.

FEATURED JOBS

Emergency Medicine Physician - UAMS Faculty: UAMS is seeking an assistant professor of emergency medicine.

UAMS Medical Director of Population Health: UAMS is seeking an experienced, collaborative and innovative physician leader for a new position within the Primary Care and Population Health Service Line.

OB/GYN Physician: Starting at \$330,000 annually, Delta Memorial Hospital in Dumas has an immediate opening for an OB/GYN Physician.

Contact Carla Alexander (501-686-7934 or carla@UAMS.edu) to find out more about recruitment services.

Visit MedJobsArkansas.com for a complete listing of job descriptions and opportunities. **Follow MedJobArkansas:**





A robotic arm hovers over the lumbar region of a patient's spine as neurosurgeon Hector Enrique Soriano-Baron, M.D., marks the spots where he will make incisions.

PHYSICIAN PROFILE



SANJAY MARABOYINA, M.D.
Associate Professor, Department of Radiation Oncology
UAMS College of Medicine
Clinical Director of the UAMS-Baptist Radiation Oncology Network

Cover story continued

latest technology and know-how, exposing them to earlier detection and intervention as well as less pain and shorter recovery times.

UAMS' increasing use of robotics, coupled with its multidisciplinary approach to treating patients and its enthusiasm for using state-of-the-art technology, is also revolutionizing the training of surgical residents, who are beginning their medical careers better equipped than ever.

Among the new robotic procedures being done at UAMS are esophagectomies — the removal of all or part of the esophagus, usually due to cancer, followed by the reconstruction of the esophagus using the upper part of the stomach, shaped into a tube.

Katy Marino, M.D., an assistant professor of surgery who performed the first two robotic esophagectomies at UAMS in late 2023, said that with the da Vinci Xi robot, "we're making multiple small incisions, each about the size of a finger," through which long and slender robotic instruments can easily pass, along with a very small camera.



In contrast, the open version of the procedure involves three large incisions — one in the belly, one in the chest and often, one in the neck as well — that can make recovery more painful and require longer hospitalization.

"Open esophagectomy is a big operation," Marino said, adding that even when using a laparoscopic or a robotic approach, "it's still a big operation on the inside."

In a laparoscopic surgery, another form of minimally invasive surgery that is performed through smaller incisions, the surgeon's hands hold the instruments. In robotic surgery, the robot holds the instruments while guided by the surgeon, seated nearby at the controls, with the aid of very clear images. Marino noted that unlike human hands, a robot is able to remain "perfectly still," adding extra precision.

In robotic surgery, she said, "We cut, we sew, we staple, we remove. We do all the things that a surgeon does with his or her hands."

Though minimally invasive surgery is usually the preferred option, Marino said that when patients have a lot of scar tissue or larger tumors, an open approach may be more appropriate.

She said the visibility and nimbleness provided by robotics can be particularly beneficial during esophageal surgery, which, because of the aggressive nature of esophageal cancer, is often performed in the disease's advanced stages, following chemotherapy and radiation.

What inspired you to become a doctor?

Since my father was a physician, I was around medicine a lot growing up. I saw firsthand the dedication required to become a doctor. During college, I explored all kinds of other interests such as environmental science, philosophy and religion, but I kept coming back to medicine. Healthcare is always changing, but the patient-doctor relationship is unique and serves as an inspiration.

What do you like most about your specialty?

I knew from the beginning of medical school that I had to do something related to cancer because the science and medical treatments were fascinating to me. Radiation Oncology was the best kept secret in medical school, so I had to go out of my way to learn about it. In addition, I like the fact that in my specialty, I get to spend a lot of time with my patients, which is something I really enjoy. I don't feel like I would have as much opportunity for that in some other specialties.

What makes you unique among your peers?

While I love the science behind medicine, I also really like to get to know my patients as human beings. My job is to help people with cancer feel better physically and experience the best medical outcome possible, but I see them as so much more than sick people with cancer. I truly enjoy getting to know them personally.

What do you like about working at UAMS?

I love that UAMS is at the forefront of medicine and that the most advanced technology, including proton therapy, is now available in Arkansas at the new Radiation Oncology Center. I'm also grateful to be part of a multidisciplinary team of cancer experts. I can give my best to my patients because of UAMS.

What are your clinical specialties?

I treat thoracic and genitourinary cancer, which commonly includes lung and prostate cancer.

What is the phone number doctors can use to make a referral to you?

501-664-4568

MEDICAL CASE STUDY: MINIMALLY INVASIVE TRANSTHORACIC ROBOTIC SPINAL TUMOR REMOVAL

Initial Contact:

On Sept. 12, 2023, a 44-year-old construction worker developed a headache, became dizzy and had difficulty seeing out of his right eye while on the job. He drove himself to the University of Arkansas for Medical Sciences (UAMS) emergency room, arriving at 3 p.m.

Assessment:

Suspecting a stroke, the doctors performed a CT angiography of the patient's head and neck, in search of narrowed or blocked blood vessels that would indicate he was having a stroke, but found none. Instead it revealed an unrelated 4-centimeter mass in front of the spine, behind the aorta, in close proximity to major vascular and neurological structures. An MRI of the brain and other diagnostic imaging also showed no signs of a stroke.



The original CTA taken in the ER to look for signs of a stroke and finding thoracic tumor.

The on-call UAMS neurosurgeon recommended that the patient schedule an evaluation in clinic for the incidental finding. Days later, the patient scheduled an appointment with UAMS neurosurgeon **Hector Enrique Soriano-Baron, M.D.**

Soriano-Baron consulted with **Nicholas Tingquist, M.D.**, a UAMS thoracic surgeon, after reviewing the patient's file and determining that the mass in the left upper lung, which arose from the left third thoracic neural foramen, also fell in Tingquist's area of expertise. Within minutes, they began planning a single surgery combining their specialties.

Soriano-Baron is fellowship-trained in biomechanics of the spine and in complex spine and robotic surgery, and completed two neurosurgical residencies. Tingquist, also a fellowship-trained surgeon, specializes in cancers of the chest as well as non-cancerous thoracic disease and conditions, and performs minimally invasive laparoscopic and thoroscopic procedures, as well as robotic chest and abdominal surgery.

Because the patient was uninsured, they sought help from UAMS financial counselors and social workers, who expedited financial assistance to ensure that the surgery could proceed on Oct. 18.

Procedures:

First, while the anesthetized patient lay face down, Soriano-Baron entered through the third and fourth thoracic vertebra and used a drill to separate the bone and the joint from the very sensitive thoracic spinal cord.

"The tumor had multiple complex areas to work with, and one was the attachment near the thoracic cord," he said. "The stem of the tumor

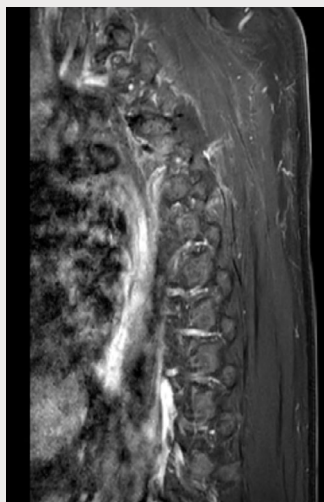
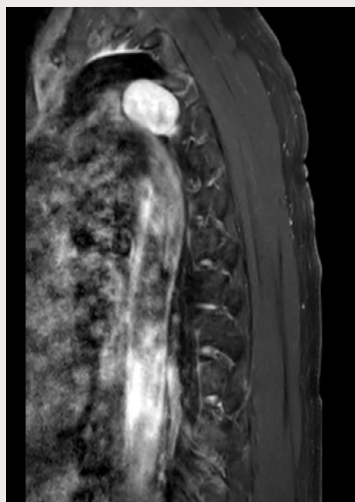


These images were taken during the surgery.

was attached to the nerve root, and then there was its involvement into the mediastinum and the thoracic cavity"

"In order to get gross total resection, it needed to be approached from different angles," he continued. "We thought that the safest way of doing it was by me going first and separating the mass from the cord, and taking the stem of the tumor out by amputating the nerve root. Once it was completely separated from the neural structures, I closed my part and then Dr. Tingquist came in from a different approach – a different incision – and did his part."

"We had to reposition the patient to do the thoracic approach, putting the patient on his right side with the left side up," Tingquist said. "I



Sagittal thoracic MRI with contrast, pre (left) and post-op (right).

made four small incisions between the ribs, and then we could dock the robot. We identified the tumor at the top of the chest, where we expected, and opened the lining around it, called the pleura, which allowed us access to that part of the posterior mediastinum.

“We used a combination of insulated heating instruments to remove attachments from that area, and there are a few areas where there are peripheral nerves where it coalesces, and we used some surgical clips to be able to detach those,” he continued. “Eventually, after continuing to dissect around this area, I found the silk tie that Dr. Soriano placed for me, and knew we were at the most posterior extent of our dissection and we were safe. Then we were able to remove the tumor from its attachments to the surrounding vascular structures like the aorta and the subclavian artery.”

“Once we removed all the attachments from around the tumor and felt like we had good margins on the tumor itself,” Tingquist said, “then it’s free, and we’re able to just place it in a bag through one of the small incisions and remove that.”

Each surgeon’s part took about one hour.

A pathology report confirmed that the mass was a schwannoma – a rare type of tumor that forms in the nervous system. Although benign, its timely removal ensured that it wouldn’t progress.

Follow-up:

The patient did not have to spend time in the Intensive Care Unit, and he went home two days later.

“He was adamant that he wanted to go back to work immediately,” Tingquist said.

Discussion:

This was the first robotic-assisted transthoracic spinal tumor removal at UAMS, for which Soriano credited UAMS’ multidisciplinary approach, advanced technology and innovative mindset.

Tingquist said that if not for the thorough imaging tests performed in the emergency room, the tumor likely would have grown, “eventually invading the nearby major vascular and neurological structures, and threatening the patient’s life, as well as making removal much more complicated.”

“The other approach to be able to do this is a very difficult and painful high thoracotomy, to be able to get access to this area,” Tingquist said. “It’s a very difficult location even for thoracic surgeons to access, because it is at the top of the chest.”

“The operating room staff and leadership really helped with this too, because we talked about what our plan would be, and they were very supportive,” he added. “It all came together to provide a unique solution that likely wouldn’t be available at any other institution in Arkansas.”

Hector Enrique Soriano-Baron, M.D.



Assistant Professor

Department of Neurosurgery

UAMS College of Medicine

Co-Director, Joint Spine Services

Education

Doctor of Medicine, Facultad de Medicina UNAM, Mexico City

Residency

Neurological, National Institute of Neurology and Neurosurgery, Mexico City

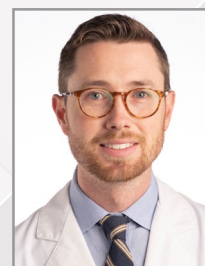
Neurosurgery, Wake Forest Baptist Medical Center, Winston-Salem, N.C.

Fellowship

Biomechanics of the Spine, Barrow Neurological Institute, Phoenix

Complex Spine and Robotic Surgery, Johns Hopkins University, Baltimore

Nicholas Tingquist, M.D.



Assistant Professor

Division of Thoracic Surgery

Department of Surgery

UAMS College of Medicine

Education

Doctor of Medicine, UAMS

Residency

General Surgery, UAMS

Fellowship

Cardiothoracic Surgery, Vanderbilt University Medical Center, Nashville, Tennessee

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To request speakers or topics or to learn more about how the UAMS Physician Relations & Strategic Development team can help you, visit UAMShealth.com/MD

JANUARY 30

Human Trafficking: Do You Know Who is in Your Exam Room

Melony Hilton, RN MBA, FACMPE, CPHRM, CCM
SVMIC

FEBRUARY 6

Digital Healthcare 101

Terri Imus
IDHI Nurse Administration

FEBRUARY 13

Overview of Colorectal Cancer in Geriatrics

Shinho Kang, M.D.
Department of Surgery, Colorectal

FEBRUARY 20

TBD

FEBRUARY 27

Physician Contracts Pearls and Pitfalls

Jennifer Smith, J.D., RN
UAMS INST

MARCH 5

Sickle Cell Update

Lindsey Dayer, PharmD
Department of Pharmacology

MARCH 12

Thoracic Surgery Update

Nicholas Tingquist, MD
Department of Surgery, Thoracic

MARCH 19

No LOD- Spring Break

MARCH 26

TBA

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