



LUNG CANCER RESEARCHER CONDUCTS CLINICAL TRIAL FOR LIQUID BIOPSIES

What will lung cancer diagnosis and treatment look like in the future? Look no further than the research at UAMS that is happening today.

“We’re coming into the long-promised ‘future’ of cancer treatment,” said physician-scientist **Donald J. Johann Jr., M.D.** “For the last 50 years, the holy grail of cancer research has been being able to detect the presence of cancer with a simple blood test, known as a liquid biopsy, and treat cancer patients on an individualized basis, which is precision medicine.

In pursuit of this quest, Johann was awarded \$1.47 million from the Food and Drug Administration (FDA) to continue a clinical trial to develop a liquid biopsy method for diagnosing and monitoring lung cancer.

“Recent advancements in genetic sequencing technology, computational science and the ability to manage massive amounts of data have made this type of research possible,” he said. “The vision is to combine the power of these approaches with clinical knowledge to improve outcomes. This is the future of cancer medicine, and it’s all doable.”

Johann is an associate professor in the departments of Biomedical Informatics and Internal Medicine in the UAMS College of Medicine. Biomedical informatics is a key part of Johann’s work. Its powerful computational methods allow him to process information on a large scale, looking for previously unrecognized patterns.

Lung cancer is the leading cause of cancer-related deaths in the United States and the world, and the incidence in Arkansas has been higher than the national average for the past 20 years. Early stage lung cancer is treatable with surgery and chemotherapy and/or radiation, but the cancer often returns after two to three years and is deadly.

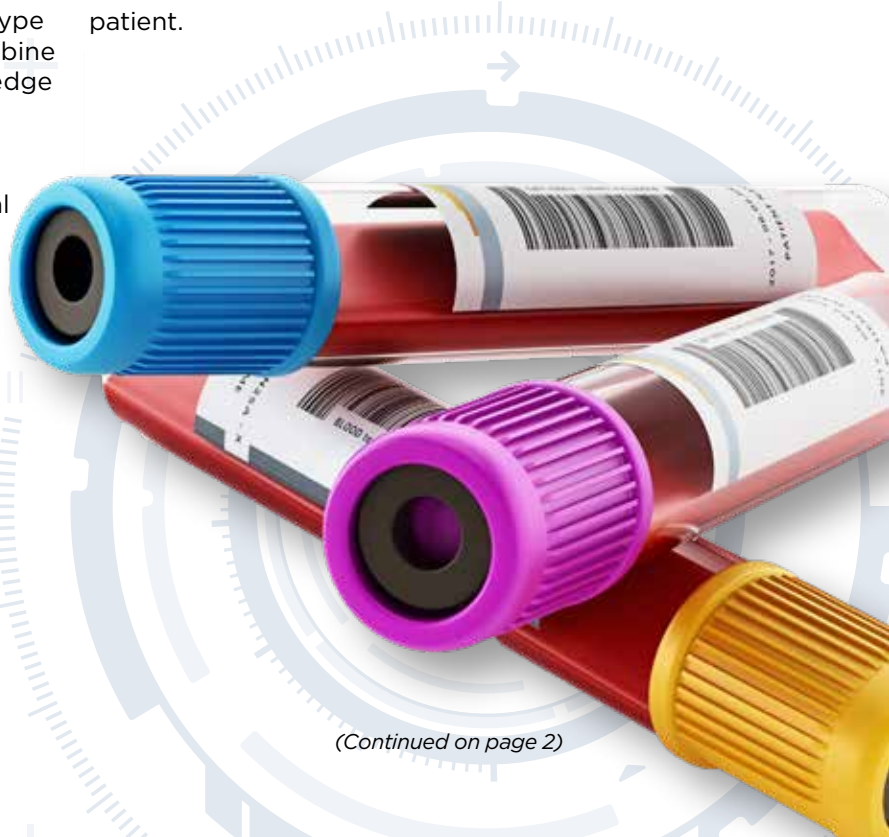
Researchers like Johann believe precision medicine is key to changing these statistics.

As an integral part of Johann’s clinical trial, UAMS surgeons provide samples of the tumor at

the time of its removal. Back in the lab, Johann’s team runs genetic sequencing on the tumor and re-grows it using different methods. Once the sample tumor is big enough, the team tests individual existing drugs and novel combinations of existing drugs on the tumors to find the most effective treatment.

The information is analyzed and stored so that if an individual patient’s cancer comes back, the doctors will know the best therapies to use. The information is also compiled in large datasets so researchers can look for aggregate patterns and identify trends regarding which treatments work best for different types of tumors.

The goal is for scientists to be able to genetically test a tumor to identify the best course of treatment for that individual patient.



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Donald J. Johann Jr., M.D., consults with members of his lab, from left, Meei Liu and Ikjae Shin, Ph.D.

Liquid biopsies are important because the average diagnosis for lung cancer patients is about age 70. Patients are often in poor health in addition to battling cancer, and traditional invasive biopsies can lead to complications or death.

Patients in Johann's clinical trial give blood samples at multiple stages of treatment. The research team determines whether the cellular material shed by tumors into blood can help doctors detect cancer earlier and monitor patients during cancer treatments to improve outcomes. Again, compiling big datasets plays a role.

The liquid biopsy part of Johann's lung cancer work is also supported by the Blood Profiling Atlas in Cancer (BloodPAC), a nonprofit consortium for data sharing between stakeholders in industry, academia and regulatory agencies with the goal of making liquid biopsies a reality.

BloodPAC also supports liquid biopsy clinical trials at Memorial Sloan Kettering Cancer Center for prostate cancer, University of Southern California for breast cancer, and University of Pennsylvania for pediatric cancers.

"The collaborative element to this is very important. We work with three very prestigious, NCI-Designated Comprehensive Cancer Centers to accelerate the

development of liquid biopsies for cancer treatment guidance and less invasive clinical care," Johann said. "We want to catch disease early and operate on it for cure, monitor it effectively, develop model systems

effectively and then look at potential therapies to see what would be the best treatment for each patient, instead of just giving everyone the standard treatment.

"The practice of clinical oncology is rapidly changing, and we need to be part of that and contribute. When I came to UAMS, I believed we should be able to do state-of-the-art cancer research and treatment here. I'm proud to be part of this science, the teamwork and potential for our patients."

Johann's work on lung cancer has been underway for three years. During previous phases, his team developed the advanced bioinformatics and infrastructure at UAMS that are necessary to handle the large datasets involved in this research, and he brought firsthand knowledge of the latest molecular technologies to UAMS.

UAMS is working to achieve National Cancer Institute (NCI) Designation for its Winthrop P. Rockefeller Cancer Institute, which would benefit Arkansans with improved access to clinical trials and expanded access to federal research funding. Research like Johann's is both part of that effort to gain designation and an example of what will be possible - on an even larger scale - once designation is achieved.

For more information, visit Cancer.UAMS.edu. ■



Dear Colleagues,

I'm happy to share that U.S. News & World Report ranked UAMS Medical Center the No. 1

hospital in Arkansas on its 2019-20 list.

UAMS ear, nose and throat services ranked among the top 50 nationwide, coming in at No. 42.

Meanwhile, UAMS cancer services were singled out as "high performing" on a national level, and several other services and procedures were designated as "high performing" regionally: colon cancer surgery, heart failure, hip replacement, knee replacement and lung cancer surgery.

For the 2019-20 ratings, U.S. News evaluated more than 4,500 medical centers nationwide.

The Best Hospitals ranking indicates quality complex care for challenging health conditions and for common elective procedures. "High performing" ratings designate specialty care that is significantly better than the national average, as measured by factors such as patient outcomes, volume, quality of nursing and other care-related indicators.

These rankings aim to offer patients and physicians a resource for making informed decisions about care. U.S. News found these programs to be special, and we couldn't agree more.

Best,

A handwritten signature in black ink that reads "Stephen A. Mette M.D.".

Stephen A. Mette, M.D.
Interim Senior Vice Chancellor for Clinical Programs
Interim Chief Executive Officer
Chief Clinical Officer
University of Arkansas for Medical Sciences Medical Center

Orthopaedics Sets Clinic for Upper Extremity Amputees

Patients with amputations to their fingers, hands and arms can receive care from a specialized physician, occupational therapist and prosthetist all under one roof at the Orthopaedics Clinic on Autumn Road.

Fellowship-trained upper extremity surgeons **Mark Tait, M.D.**, and **John W. Bracey, M.D.**, are part of the monthly clinic,



along with occupational therapist Angela Green and an upper extremity prosthetist.

Together, they provide a level of upper extremity care unique in Arkansas.

The clinic is for anyone with an upper limb amputation, including multiple fingers, partial hand, full hand, below the elbow, above the elbow and into the shoulder. The amputation could be recent or several years or decades in the past.

For more information, visit Go.UAMS.edu/AutumnRoad or call 501-526-1046.

UAMS Starts Digital Health Program to Help Spine Patients Statewide

UAMS' digital health spine clinic allows patients across Arkansas who have recently undergone spinal surgery or have spinal disorders or spinal cord tumors to get treatment close to home without having to travel to Little Rock to see a specialist.

The clinics are held through a live video and data connection with spine surgeon **T. Glenn**



Pait, M.D., at UAMS regional campuses around the state.

Pait has trained the local nursing staff how to conduct neurological and

spinal examinations under the direction of the physician and to assess the patient's condition.

Pait reviews and discusses the patient's medical records, radiological studies, imaging and other information with the patient. *To make a referral, call 501-686-5270 option 5.*

Guido J.K. Tricot, M.D., Ph.D., Returns to UAMS

Hematologist **Guido J.K. Tricot, M.D., Ph.D.**, has returned to UAMS' Myeloma Center.

When Tricot was first at UAMS from 1993-1997, he was intimately involved in developing and pioneering the Total Therapy Approach to myeloma, consisting of



induction chemotherapy, stem cell transplantation consolidation and maintenance. This treatment method was adopted worldwide and is responsible, together with the introduction of novel drugs, for the greatly improved median survival rate for myeloma, which exceeds 10 years, with some patients achieving cure.

Tricot also served as director of clinical research for myeloma at UAMS from 2000-2007.

To make a referral, call 501-686-7105.

Psychiatry Names New Faculty, Medical Director

Veronica Raney, M.D., has joined the Division of Child Psychiatry's Child Study Center as medical director, one of several new faculty positions within the Department of Psychiatry.

Srini Gokarakonda, M.D.,



Veronica Raney, M.D.

has also joined the Child Study Center. **Victoria Flynn, M.D.**, divides her time between the Psychiatric Research Institute's (PRI) Walker Family Clinic and the UAMS Student Wellness Program. **Hannah Williams, M.D.**, and **Amy Grooms, M.D.**, see patients in the Walker

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CONSULT Quiz of the Month

QUESTION

Your patient is a 36-year-old female recreational tennis player with elbow pain radiating down the posterior aspect of her forearm that has increased over the past two days. She recently began playing tennis on a team that practices nightly. She is afebrile with normal vital signs. Examination reveals tenderness distal to the lateral epicondyle, with pain increased with wrist extension against resistance. She has increased pain with resisted supination.

Which of the following is most appropriate for this patient?

- A. Opioid analgesics
- B. Corticosteroid injection
- C. Counterforce bracing
- D. Extracorporeal shock wave therapy
- E. Strength training

News to Know: Updates from UAMS

(Continued from page 3)

Family Clinic, with Williams also assigned to the Institute for Digital Health & Innovation OB Program and PRI's Women's Mental Health Program.

Hunter Gibbs, M.D., who is an associate professor in the Department of Psychiatry, serves as an attending in PRI's adult inpatient unit. **Molly Reeves, M.D.**, serves as the consultant-psychiatrist for child and adolescent patients at Arkansas Children's Hospital and also sees patients in the Child Study Center.

All are assistant professors in the department.

Jessica Coker, M.D., has



Jessica Coker, M.D.

been promoted to medical director of the Psychiatric Research Institute's women's inpatient unit. Coker, an assistant professor in the Department of Psychiatry and the Department of Obstetrics and Gynecology, will also continue her role as co-director of the Women's Mental Health Program with an emphasis on inpatient services.

For more information about psychiatry services at UAMS, call 501-526-8100.

UAMS Offers Free Exercise Classes for People with Parkinson's Disease

UAMS has received two grants totaling almost \$29,000 to launch a free exercise program for people with Parkinson's disease and Parkinsonism.

The Parkinson's Foundation provided \$13,924 to train, staff and support the program, and the Philip R. Jonsson Foundation of Little Rock provided \$15,000 for the equipment.

Classes meet from 2:30-3:20 p.m. on Tuesdays and Thursdays in the Ottenheimer Fitness Center in the UAMS Donald W. Reynolds Institute on Aging, 629 Jack Stephens Drive.

For more information, call 501-766-5045.

Academic Appointments

Cindy Stowe, Pharm.D., has been named dean of the UAMS College of Pharmacy.

Mark Williams, Ph.D., has been named dean of the UAMS Fay W. Boozman College of Public Health.

Brian E. Gittens, Ed.D., M.P.A., has been named vice chancellor for diversity, equity and inclusion at UAMS.

Shuk-Mei Ho, Ph.D., has joined UAMS as vice chancellor for research.

UAMS has named **Jay Gandy, Ph.D.**, as associate provost at the UAMS Northwest Regional Campus.



Cindy Stowe, Pharm.D.



Mark Williams, Ph.D.



Brian E. Gittens, Ed.D., M.P.A.



Shuk-Mei Ho, Ph.D.



Jay Gandy, Ph.D.

For a list of new physicians, visit

UAMShealth.com/MD

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 Campuses and UAMS faculty. Physician/provider opportunities are available in all specialties throughout Arkansas.

FEATURED JOBS

Family Medicine Residency Program Faculty — Geriatric Focus: UAMS has an opening for a geriatric physician or a family medicine physician with a CAQ/fellowship in geriatrics at the UAMS South Central Regional Campus, Pine Bluff.

Family Medicine Residency Director: UAMS has an opening for a residency program director at the UAMS Northwest Regional Campus, Jonesboro.

Pediatric Faculty Opportunity: UAMS is seeking a pediatric physician for a full-time faculty position at the UAMS Southwest Regional Campus, Texarkana.

Recruitment services contact:

Carla Alexander: 501-686-7934 or carla@uams.edu

For a complete listing of job descriptions and opportunities, visit: MedJobArkansas.com

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Neurosurgical Oncology Looks to Future with Tumor Tissue Banking

Each day in Neurosurgical Oncology at UAMS blurs the line between the future of what is possible and the reality of what is already being done.

Nowhere is this more dramatically illustrated than with the brain tumor tissue bank, overseen by **Analiz Rodriguez, M.D., Ph.D.**, director of neurosurgical oncology, and **J.D. Day, M.D.**, chairman of the Department of Neurosurgery.



Since mid-2018, the Neurosurgical Oncology team has collected brain tumor samples for genetic analysis from all consenting patients.



“We’re trying to tailor treatment specifically to the individual patient through precision medicine, while also learning about the nature of these tumors for the benefit of future patients,” Rodriguez said. “Everyone has a slightly different tumor and responds to therapy in a different way, which makes treatment challenging. However, technology is changing that right now.”

In some cases, genetic testing reveals a tumor type with a known treatment. Sometimes patients are a match for an ongoing clinical trial. For others, the researchers use these samples to grow more cells in the lab and test different



Analiz Rodriguez, M.D., Ph.D., (pictured) is director of neurosurgical oncology and is leading UAMS’ brain tumor tissue bank with J.D. Day, M.D., chair of the Department of Neurosurgery.

compounds on the unique tumor types in the search for new therapies. Pharmacologists at UAMS assist the researchers in developing the specific compounds.

These results are being compiled and analyzed with the help of the UAMS Department of Biomedical

Informatics. As trends emerge from the massive amounts of data, more patients will gain access to personalized treatment solutions based upon the specific characteristics and genetics of their tumor. The data analysis is also helping the researchers understand how these tumors form in the first place, providing an additional means of prevention in the future.

Scientists have long had ideas of how personalized medicine might look in the neurosurgical oncology setting. The patient takes a genetic test, perhaps from a sample of their tumor or maybe even a blood test, and those genetic results determine the best treatment. Each patient can benefit from their own unique blend of surgery, medicine and radiation/chemotherapy.

Day said brain tumor tissue banking is helping these theories become reality.

“It’s not really that far off,” Day said. “A lot of it is happening now.”

For new brain tumor referrals, call 501-686-5270. ■

MAURICIO GARCIA SAENZ DE SICILIA, M.D.

Assistant Professor of Medicine
Liver Transplant Medical Director
Division of Gastroenterology and Hepatology



What inspired you to become a doctor?

I was fortunate to know I wanted to be a doctor early in my career. I had several role models who inspired me. They showed me that medicine would enable me to apply science for the benefit of my patients, and I saw the impact that physicians have on individuals and society.

What do you like the most about your specialty?

Transplant hepatology includes a wide spectrum, from simple abnormalities on lab chemistries to life-threatening illness. The field is challenging but gratifying. It is truly inspiring to treat patients with the severe, disabling complications of end-stage liver disease, guiding them through a life-changing liver transplantation and witnessing their impressive recovery. It is humbling when you are able to offer them hope for a better life through proper evaluation for matching, right timing and an altruistic donation.

What makes you unique among your peers?

I have extensive training on transplant hepatology, allowing me to tackle complex liver diseases. My team is unique in Arkansas as the only program with this level of training. I genuinely understand and care about the well-being of my patients. I pay special attention to details during the initial evaluation, treatment and follow up to ensure the best possible outcome.

What are your clinical specialties?

Liver transplantation, hepatocellular carcinoma, end-stage liver disease, portal hypertension and its complications, management of ascites including paracentesis, hepatic encephalopathy, alcoholic liver disease and alcoholic hepatitis, viral hepatitis and autoimmune and metabolic liver diseases. I also perform a diagnostic and therapeutic endoscopic procedures.

How can doctors make referrals to you?

Referral for liver transplantation: 501-686-6644

Referral for hepatocellular carcinoma: 501-296-1200

Referral for liver diseases in general: 501-603-1900

Email: MGarcia@uams.edu

MEDICAL CASE STUDY

Awake Craniotomy with FaceTime

BACKGROUND

The UAMS Department of Neurosurgery has offered awake craniotomies since 2014 for brain tumor surgeries close to areas of the brain that control the senses, movement, language and memory.

The patient is awake for most of the surgery and is asked to complete neurological tasks while he or she is observed for changes that indicate the potential for collateral neurological damage.

Indranil Chakraborty, M.D., the team's neuroanesthesiologist, wrote the awake craniotomy protocol along with neurosurgeon **J.D. Day, M.D.**, who is also chair of the department.

Patient selection has been key to the 50-plus successful surgeries to date. The procedure can last four to six hours, and the patient's head is secured in a fixed position for most of that time. Patients must be able to handle discomfort and high levels of stress and understand in advance what the surgery will entail.

In addition to selecting the right candidates, the team also strives to keep the patient calm during surgery.

With this in mind, Chakraborty considered allowing a patient to use FaceTime, a smartphone video messaging application, to talk to family members at certain parts of the surgery to keep the patient calm, allow the team to observe the patient's neurological functions, and reassure the family, which would be an example of providing patient- and family-centered care.

INITIAL CONTACT

A 34-year-old male patient with a glioblastoma the size of an orange in the left hemisphere of his brain was scheduled for an awake craniotomy.

The patient had support from close family members and a fiancé, who would be in the waiting room during the surgery.

ASSESSMENT

Chakraborty discussed the idea of the family using FaceTime during the

surgery with Day, the patient and his family.

Chakraborty considers it vital for there to be extensive discussion with the patient and family before any awake craniotomy, so that they have clear and realistic expectations about the surgery and know how it may differ from standard surgery.

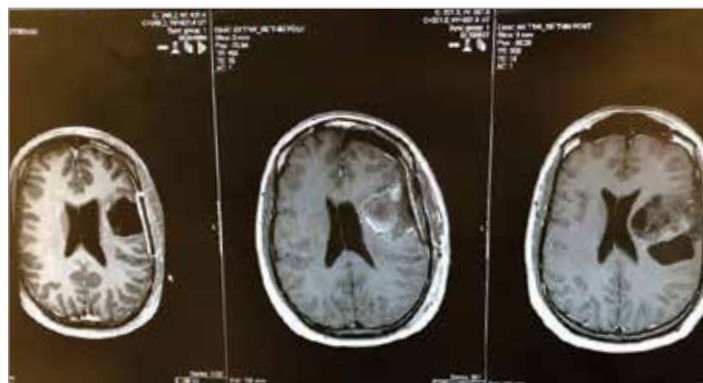
In this case, Chakraborty expanded that discussion to include what might happen because of the use of the smartphone in the operating room. The family might see something distressing. Patient information could be exposed. A neurological complication might occur on camera.

During these discussions, Chakraborty's goals were to set expectations, establish rapport and also evaluate where the patient and family had the stress management skills for communicating with and reassuring each other during the surgery.

The brain tumor team, the patient and the family agreed to proceed.

PROCEDURES

Chakraborty put in an arterial line to monitor the patient's blood pressure and vital signs. The urinary catheter was inserted while the patient was awake, in contrast to the standard practice of inserting it under general anesthesia.



Imaging shows the hole left behind by the tumor removal and the patient's brain filling in the space over time.



Indranil Chakraborty, M.D., is the neuroanesthesiologist who wrote the awake craniotomy protocol used at UAMS with neurosurgeon J.D. Day, M.D. They have performed more than 50 awake craniotomies since 2014.

Chakraborty then applied a scalp block. Using seven injections on each side of the head for a total of 14 injections, the procedure blocks the nerves that supply the scalp, leaving the whole head numb.

The head was then fixed in a particular position by the surgeon, who began surgery. Chakraborty mildly sedated the patient to a drowsy state during this phase because the patient's feedback is not needed.

Day then performed a standard brain surgery, with the exception being that the patient was awake and communicating with a member of the team. The patient was asked to perform tasks. These tasks were periodically repeated so the team could notice any changes.



The patient's family prepares to talk to the patient using FaceTime during the awake craniotomy.

It was during these periods that the FaceTime chats occurred. They were initiated only when the patient, surgeon and team agreed they were ready. Each chat was about 30 seconds to a minute long, and there were a total of three chats.

They went well. The team was able to watch as the patient talked and recognized his family, which were good neurological indicators.

After the tumor removal, Chakraborty again mildly sedated the patient while Day closed the incision.

FOLLOW-UPS

Patients who undergo awake craniotomies with the scalp block

recover more quickly than those who undergo standard brain surgery under general anesthesia.

The patient was awake and alert, he ate and drank quickly, and the nerve block kept him pain-free for up to 24 hours.

Instead of going to the ICU, the patient was able to go to an observational step-down unit on the neurosurgery ward. He was also able to go home faster and required less pain medication.

The family reported that they liked hearing from the patient during the surgery. They found this more reassuring than if the news had come from a member of the medical team. ■

Indranil Chakraborty, M.D.



**Associate Professor
Director of the Division of
Neuroanesthesiology
Department of
Anesthesiology
UAMS College of Medicine**

Education

Medical degree, Maulana Azad Medical College, Delhi University, New Delhi, India

Residency

Anesthesiology, Maulana Azad Medical College
Anesthesiology, UAMS

J.D. Day, M.D.



**Professor and Chair
Department of
Neurosurgery
UAMS College of Medicine**

Education

Medical degree, University of Washington School of Medicine

Residency

Neurological surgery, University of Southern California School of Medicine, Los Angeles

Fellowship

Research fellowship in cranial base surgery and anatomy, University of Vienna Medical School, Austria

SHARE Assists Hospitals in Lowering Readmissions

The State Health Alliance for Records Exchange's 30-day readmission notification project allows hospitals to receive a secure message notification when a patient that discharged from their facility is readmitted into any SHARE-participating hospital within a 30-day timeframe.

To participate, facilities must send admit, discharge and transfer (ADT) data to SHARE.

UAMS partners with the Arkansas Department of Health Office of Health Information Technology for SHARE.

Ask a SHARE expert how to begin at 501-410-1999 or SHAREhealth@arkansas.gov. Visit SHAREarkansas.com.

Please Join us for UAMS Gut Club

Curative Options for Hepatocellular Carcinoma

Lyle Burdine, M.D., Ph.D.
Mauricio Garcia Saenz de Sicilia, M.D.

Nov. 21

6-8 p.m.
Jackson T. Stephens Spine & Neurosciences Institute

RSVP:

go.UAMS.edu/gutclub/

**Questions? Please contact
Melanie Meyer
melanie@uams.edu or
501-686-8206**

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A resource of the UAMS Institute for Digital Health & Innovation, the LearnOnDemand.org web portal offers health care professionals the flexibility of earning continuing education (CE) on their own schedule, through an expanded array of teleconferences and online courses.

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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

All classes now FREE!

OCT. 1
Living Donor Program
Aparna Sharma, M.D.
Department of Internal Medicine

OCT. 8
Neurodegenerative Disorders of Aging
Denise Compton, Ph.D.
Department of Geriatrics

OCT. 15
Hydrocephalus
Alicia Cook, APRN
Department of Neurosurgery

OCT. 22
Traumatic Brain Injury in the Elderly
Katie Kimbrough, M.D.
Department of Surgery

OCT. 29
Tweet Others as You Wish to be Treated: Social Media Problems in the Health Care Arena
Mark Hagemeier
Office of General Counsel

NOV. 5
To be determined

NOV. 12
COPD and Inhalers
Kaci Thiessen, Pharm.D.
College of Pharmacy

NOV. 19
Endo Bariatrics
Benjamin Tharian, M.D.
Department of Internal Medicine

NOV. 26
Thanksgiving Break

DEC. 3
Culinary Medicine
Gina Drobena, M.D.
Department of Pathology

DEC. 10
Major Depressive Disorder
Jeffrey L. Clothier, M.D.
Department of Psychiatry

DEC. 17
Sickle Cell Update

DEC. 24
Holiday Break

DEC. 31
Holiday Break