



School of Medicine
University of Missouri Health



Diagnostic Radiology Residency

UNIVERSITY OF MISSOURI

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Welcome from our Chair

I am delighted to introduce you to the Department of Radiology of the University of Missouri (MIZZOU). Our department is firmly committed to our three primary missions: patient care, education, and research/ innovation/ scholarship. We perform over 300,000 exams a year serving patients at the University Hospital, Women's and Children's Hospital, Ellis Fischel Cancer Center, Missouri Orthopedic Institute, South Providence Outpatient Imaging Center and Urgent Care. MIZZOU is the Level 1 trauma center serving mid Missouri and our imaging services are fully ACR accredited. We are fortunate to have passionate faculty who deliver outstanding sub-specialized clinical care, educate our excellent medical students, residents and fellows, and perform research that advances our field.

Our residents, fellows and faculty work collaboratively with our referring providers to provide subspecialized care in all areas of radiology: Abdominal Imaging, Breast Imaging, Emergency Radiology, Interventional Radiology, Musculoskeletal Imaging, Neuroradiology, Nuclear Medicine, Pediatric Radiology and Thoracic Imaging. We have a very robust case mix that includes a large volume of both common and sub-specialty abnormalities. The opportunity to teach and work with our residents is a crucial reason many of our faculty choose to practice at MIZZOU. The volume and diversity of cases in conjunction with our commitment to excellence in education provides our residents with the necessary foundation for a successful transition to fellowship, private practice or academics.

We have state-of-the-art equipment for every modality. In October 2021, we will operationalize for both clinical patients and research subjects a whole-body 7 T MRI Magnetom Terra Scanner (Siemens) in the new NextGen Precision Health Building adjacent to the University Hospital. With its high magnetic field strength, the finest structures in the body now can be visualized. We have 8 basic science faculty and many of our clinical faculty lead or participate in research projects. Our research activities include multicenter clinical trials, NIH-funded projects, and industry-sponsored trials. Our residents, fellows and faculty routinely present their findings at national meetings such as the RSNA and actively publish in medical journals.



Talissa Altes

Talissa Altes, MD
Professor and Chair of Radiology
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Join the Mizzou Family

Quick Stats

- Graduate 5 residents annually
- 4-year program
- Options for ESIR track and research
- 20% go into private practice
- 80% pursue fellowship
- Participate in NRMP-ERAS

House Officer Salary & Benefits

Resident salaries are similar for all trainees within the Mizzou system, and are adjusted annually to account for cost of living. Training conditions and work schedules follow the guidelines of the Radiology Residency Review Committee of the Accreditation Council on Graduate Medical Education. The program provides a wide range of benefits, including malpractice insurance, personal health insurance, short and long-term disability insurance, and a 24-hour physicians lounge with self-serve food. Each resident is allotted 25 days of combined sick and vacation per year.

Educational stipends are also provided as a portion of the Department benefit package. Additionally, we pride ourselves on being a family-oriented program, and offer leave for emergencies or child birth in accordance with ABR guidelines regarding necessary training times.

Licensure

All residents must have a current Missouri license to practice medicine prior to the first day of service. Applications will be coordinated through our office to ensure compliance.

Application Process

Mizzou radiology participates in the National Resident Matching Program (NRMP), and follows all NRMP guidelines. Applications are only considered through the Electronic Residency Application Service (ERAS). Each application is reviewed with focus on academic excellence, leadership experience and potential. Qualified individuals will be invited to interview during selected dates in October, November, and December, with variable dates in January. We accept H1-B and J-1 Visas.

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About Columbia

A abundant cultural offerings, a plethora of outdoor activities, low cost of living, and an award-winning school system make Columbia, Missouri is a great place to live and work.

As the fourth largest city in Missouri, Columbia has been named as a Top City to Live and Work by Forbes, US News and others for more than 20 consecutive years. Columbia also holds the distinction of being the 13th most-educated city in the country.

Home to the Missouri Tigers, there are also over 40 city and state parks combine with over 150 miles of hiking and biking trails to create an outdoor paradise. Additionally, theatres, art galleries and local entertainment venues provide cultural outlets.



Welcome to Mizzou

MU Healthcare has a strong Radiology residency program, fostering collaboration among colleagues at all levels while creating a conducive learning environment.

Our radiology residency program seeks to train the future leaders of radiology through a combination of one on one training with subspecialty radiologists and a comprehensive didactic curriculum. The primary goal of the residency is to provide a well-rounded diagnostic and procedural experience, training outstanding general radiologists prepared for busy and diverse practice settings. Though the vast majority of our residents pursue subspecialty fellowship training, a residency at the University of Missouri provides the foundation for a successful career.

MU Radiology is deeply committed to recruiting a diverse class of exceptional residents. We know that diverse teams not only perform at a higher level and provide better patient care, but also enrich each the experience of other residents, faculty, and staff.

A healthy work-life balance is encouraged during residency training. Our community in picturesque Columbia, Missouri, is a thriving small, university town in mid Missouri near the Missouri river valley where the Ozark Mountains meet the plains. Columbia is known for fine dining, cultural activities, SEC athletics, excellent public schools, relatively low cost of living, pleasant climate, and varied outdoor recreational activities. The region is home to numerous parks, boasts an extensive trail network, and is convenient to both St Louis and Kansas City.

Our team looks forward to answering any questions you may have about our program.



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MIZZOU Health Care

MISSION

To save and improve lives –
through exemplary education, research, and patient care.

VISION

We will be the premier and transformational, academic health system for Missouri.

VALUES

Diversity, Inclusion & Equity • Respect • Service • Discovery •
Responsibility • Excellence



Clinical Rotations

Rotations are designed to encourage graduated autonomy throughout training in all radiology subspecialties. We promote the growth of diagnostic and procedural skills by a combination of subspecialty one-on-one teaching at the workstation, hands-on performance of image guided procedures, a diverse case mix, and comprehensive didactic curriculum/case conferences. Our goal is to provide an individualized experience and ensure our residents graduate as exceptional general radiologists prepared for fellowship, academic practice, or private practice.

R1, PGY 2

Body - 6 weeks
Breast Imaging - 2 weeks
Chest - 4 weeks
Cross Cover - 2 weeks
Emergency - 2 weeks
Fluoroscopy - 4 weeks
Interventional Radiology - 4 weeks
Musculoskeletal - 4 weeks
Neuroradiology - 4 weeks
Nuclear Medicine - 4 weeks
Pediatrics - 4 weeks
Ultrasound - 6 weeks
V.A. - 4 weeks

R2, PGY 3

Body - 4 weeks
Breast Imaging - 2 weeks
Chest - 4 weeks
Cross Cover - 2 weeks
Elective - 4 weeks
Emergency - 4 weeks
Fluoroscopy - 2 weeks
Interventional Radiology - 4 weeks
Musculoskeletal - 4 weeks
Neuroradiology - 4 weeks
Night Float - 2 weeks
Nuclear Medicine - 4 weeks
Pediatrics - 4 weeks
Ultrasound - 4 weeks
V.A. - 2 weeks

R3, PGY 4

AIRP - 4 weeks
Body - 4 weeks
Breast Imaging - 4 weeks
Cardiac Imaging - 4 weeks
Chest - 4 weeks
Cross Cover - 4 weeks
Musculoskeletal - 4 weeks
Neuroradiology - 4 weeks
Night Float - 6 weeks
Nuclear Medicine - 4 weeks
Pediatrics - 4 weeks
Ultrasound - 2 weeks
V.A. - 2 weeks

R4, PGY 5

Body - 2 weeks
Breast Imaging - 4 weeks
Cross Cover - 4 weeks
Emergency - 4 weeks
Focused Elective/Research - 14 weeks
Interventional Radiology - 4 weeks
Musculoskeletal - 4 weeks
Neuroradiology - 4 weeks
Night Float - 2 weeks
Nuclear Medicine - 4 weeks
Pediatrics - 2 weeks
V.A. - 2 weeks





History of MIZZOU Radiology



Gwilym Lodwick, MD

Gwilym S. Lodwick, M.D. was the founding Chair of

Radiology at MIZZOU. The first full-time faculty in the Department of Radiology, Gwilym S. Lodwick, arrived in Columbia on July 1, 1955, from Iowa City, where he had been an Associate Professor of Radiology at the University of Iowa and Chief of Radiological Services at the Veterans Hospital. He was a graduate of the University of Iowa.

Dr. Lodwick was 37 years old when he came to Missouri. Through his long and productive career at the University of Missouri, he trained many future leaders in radiology. He was a pioneer in applications to the field of radiology, particularly with regard to bone tumors and to automated diagnosis of heart and lung diseases. He helped inaugurate meaningful interdisciplinary research with Bioengineering at the university. Dr. Lodwick was able to recruit many outstanding faculty to the department and was as an effective teacher and administrator. In 1974, Dr. Lodwick received the gold medal at the International Conference on Radiology for his research work. After 23 years building and guiding the department, Dr. Lodwick retired in 1978. Not ready to stop being a radiologist and educator, he moved to Massachusetts where he served as a visiting professor of radiology at Harvard University School of Medicine and Massachusetts General Hospital.

The Department of Radiology has maintained an active, accredited radiology residency program since 1955. Graduates of the residency program are found throughout the world in private and academic practices.

There are 20 residents in our diagnostic radiology program, 2 of which are on the Early Specialization in Interventional Radiology (ESIR) track. We offer fellowships in Abdominal Imaging, Breast Imaging, Musculoskeletal Imaging, Neuroradiology, Nuclear Medicine, Pediatric Radiology and Thoracic Imaging. We believe Radiology is one of the most rewarding careers in medicine and feel privileged to be a part of such a formative time in the lives of our residents and fellows.



Educational Conferences

Core Lecture Series

A daily faculty-led conference from 12-1pm covering the essentials of radiology in all subspecialties. Topics rotate on a two year basis. Conferences are recorded and are available to review later as desired.

Daily Case Conference

A daily morning conference led by a sub specialty radiologist. Formats include case based “hot seat” conferences and question and answer audience response led case conferences.

Peer Learning Conferences

A monthly department wide conference to review classic cases, interesting cases, and misses. Cases are submitted anonymously for review. Case review engenders lively educational discussion.

Follow-up Conference

Residents and faculty present rare and interesting cases that have confirmatory imaging, surgical, or pathology follow-up confirming the diagnoses with a discussion of their differential considerations.

Journal Club

We utilize clinical questions to drive journal club discussions. Residents, led by a faculty mentor, review and present literature relevant to the question at hand.

Multi-Disciplinary Conference

Rotation specific clinically driven conferences with multiple subspecialties focused on providing the most appropriate imaging diagnosis and follow-up to our patients.





What Sets Mizzou Radiology Apart

The MIZZOU Health Care System is the only Level I trauma center in central Missouri. Physicians throughout the state refer many of their most complicated cases to our flagship hospital. The 350+-bed hospital system specializes in treating the most severe illnesses and injuries in addition to routine community medicine. Its seven-story Critical Care Tower provides the latest in medical technology for critically ill or injured patients.

MIZZOU radiology provides a rich environment where residents are exposed to a wide breadth of complex pathology and state of the art technology in a collegial learning environment designed to foster resident growth through one-on-one clinical teaching, daily structured conferences and graduated responsibility. It's our mission to provide you with the best possible foundation for your career. Our graduates are well prepared for whatever are their next steps: fellowship, private practice, academic practice or even entrepreneurship. We are large enough to give sub-specialized education in every area of radiology, but small enough to foster collegiality and community. We value camaraderie among our resident classes and between residents, fellows, faculty and staff.

Diagnostic Residency Overview

Our dedication to resident education in conjunction with the volume and diversity of cases provides our residents with the training, experience and confidence to start a successful career in radiology. Our rotation schedule was designed to give trainees early exposure to and graduated learning in all radiology subspecialties, excellent preparation for call, and 14 weeks of focused/elective time in the 4th year for targeted, subspecialty learning in the area(s) of their choice.

Each resident is provided with an iPad preloaded with classic radiology textbooks and other educational material for their use during the residency. Each resident attends the American Institute for Radiologic Pathology (AIRP), with cost of attendance covered by the program. To help residents prepare for the Core Exam, a diagnostic physics course is offered each spring and is integrated into didactic/case conference lecture schedule. Interactive educational websites and software including StatDx and RadPrimer are available for independent learning. An individual educational fund is provided for books and other educational material.

Our training in IR emphasizes experiential learning. Residents have the opportunity to be primary operator on a wide variety of image guided procedures. For those residents with an interest in specializing in IR, we offer the Early Specialization in IR (ESIR) pathway. The ESIR pathway allows diagnostic radiology residents to complete 11 IR or IR-related rotations during their diagnostic radiology residency. This allows them to match directly into the second and final year of an independent IR residency. With our high IR case volume, our ESIR residents have no difficulty meeting the ESIR requirement to participate in at least 500 IR/IR-related procedures during diagnostic radiology residency.

We value our trainees and are committed to providing a supportive educational environment. We have a Resident Wellness Committee that provides feedback to leadership and organizes resident events. There are opportunities for additional compensation through internal moonlighting. Residents also actively participate in medical student education. Rounding out our educational environment, we offer subspecialty fellowship training in Body, Breast, Chest, MSK, Neuroradiology, Nuclear Medicine and Pediatric Radiology.

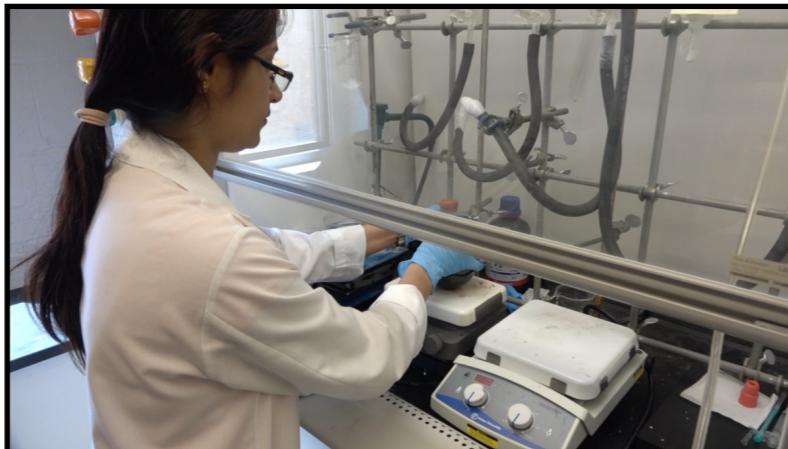
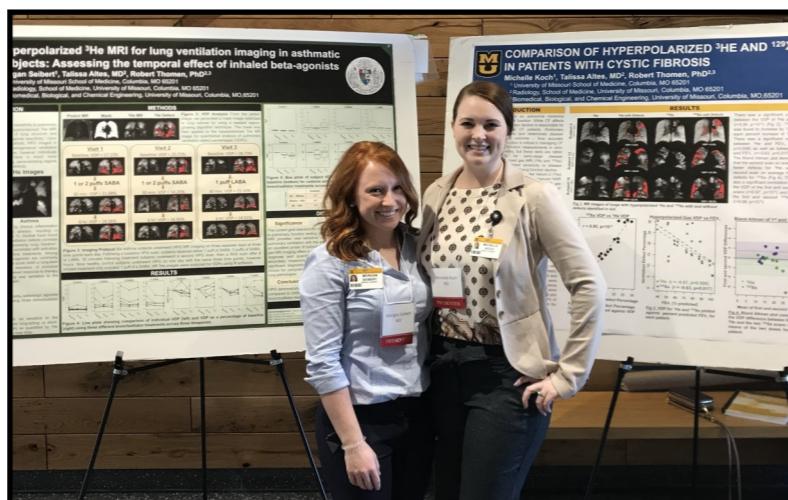
It is our goal to provide you with the best possible foundation to pursue your goals and build a successful career. We recognize that to achieve this you need excellent mentors, a collegial environment, high volume clinical experience, and the flexibility to mold your education to fit your interests—all things you will find at MIZZOU.



Research & Scholarship

Residents have a myriad of opportunities to participate in research and scholarly activities. Our faculty, residents and fellows routinely present their findings at national meetings such as the RSNA and actively publish in medical journals. To encourage participation in research, residents receive time and funds to present their scholarly work at national and international meetings. We routinely nominate our residents to attend competitive national research/leadership development programs such as the RSNA/AUR/ARRS Introduction to Academic Radiology (ITAR) program, ACR-AUR Research Scholar Program, and the AUR Radiology Resident Academic Leadership Development Program (ARRALD). The Missouri chapter of the ACR typically sponsors one MIZZOU resident each year to attend the national ACR meeting.

Through our Alliance with Siemens Healthineers, we are focused on improving healthcare delivery, education and workforce development, healthcare innovation, and research and collaboration. The upcoming NextGen Precision Health Building, MU will house a state-of-the-art whole body 7.0T MRI scanner - the strongest available MRI system approved for clinical use. This system is only in operation at a handful of sites in the US. Our clinical and research faculty receive funding through multicenter clinical trials, NIH-funded projects, and industry-sponsored projects. Residents are welcome to participate in these projects.



"Mizzou was appealing to me after coming here for my interview. You could tell the residents were really close when they were talking about how they had gone to trivia night together the week before. I could tell there was a lot of camaraderie among the current residents and that was important to me."

- Dr. Julie Senne
Former Fellow

"I enjoy the MU Residency Program, we are a medium size program with 5 residents per class, so you don't get lost in the mix. It's a good size program where you get plenty of one on one teaching."

- Dr. Christy Waranch
Former Chief Resident



"This was the program where I felt most at home and welcomed. As a rotating medical student, I felt immediate camaraderie with the residents, faculty, and staff. The program offers incredible breadth and depth of opportunity in terms of education and extracurriculars and remains constant in its efforts to improve. This was the program I felt would best support my learning and growth as a radiologist without having to defer goals in other areas of my life. As a resident, I am glad this is where I landed."

- Dr. Benjamin Vega
Current Resident

"My assessment of Mizzou during my interview time was confirmed throughout my training. I received really strong training to allow me to be successful in fellowship and my private practice job. By working hard and doing my part throughout training Mizzou allowed me to flourish and be successful as I learned how to become a radiologist. One strength of Mizzou was I was able to get more hands on experience than at other institutions both in diagnostic and interventional Radiology because of Mizzou's commitment to education and training."

- Dr. Justin Nelson
Former Resident



Building the Future of Medicine



The body imaging division performs and interprets the full spectrum of abdominal and pelvic diagnostic imaging procedures (including radiography, fluoroscopy, ultrasound, CT, and MRI). Our areas of expertise include hepatobiliary, pancreas, gastrointestinal, genitourinary, oncologic imaging, non-invasive vascular imaging, contrast-enhanced ultrasound, dual-energy CT, CT colonography, CT/MR enterography, MR of assessment of pelvic floor dysfunction, multi-parametric prostate MRI, high-risk obstetrics, and post-trauma imaging.



Missouri Orthopedic Institute

A free standing orthopedic center with both inpatient and outpatient services is within walking distance to the main hospital. MOI is the site for the MSK rotation. The MSK reading room is embedded in the orthopedic surgery clinic area. MOI houses one 3T MRI, one 1.5T MRI, one CT scanner, multiple diagnostic radiography rooms and two US/procedure suites.



Our Neuroradiology faculty specialize in brain, ear/nose/throat, and spine imaging. We collaborate with specialists from Neurology, Neurosurgery, and Interventional Neuroradiology.

Personalized teaching at the workstation, a strong didactic curriculum, and multidisciplinary conferences provide an excellent foundation that allows our residents to develop the skill set required to interpret the complex advanced imaging studies encountered day and night at our tertiary care center.

Women's & Children's Hospital

Located less than 5 mi away from the University, Women's and Children's hospital is the only hospital dedicated to women's health and pediatric care in mid-Missouri. In the radiology suite at WCH, we have one 1.5 T MRI, one CT, one fluoroscopy room, and two US rooms. Residents do Pediatric Imaging at WCH.



Training Locations

University Hospital

The flagship hospital for the University of Missouri. University Hospital has over 350 patient beds, with two 3T MRI, one 1.5 T MRI, four CT scanners, one PET/CT, five US rooms, five IR procedure suites, and three fluoroscopy rooms. University hospital is the site of most clinical rotations including Abdominal Imaging, Fluoroscopy, Interventional Radiology, Neuroradiology, Nuclear Medicine, Thoracic Imaging, and Ultrasound.



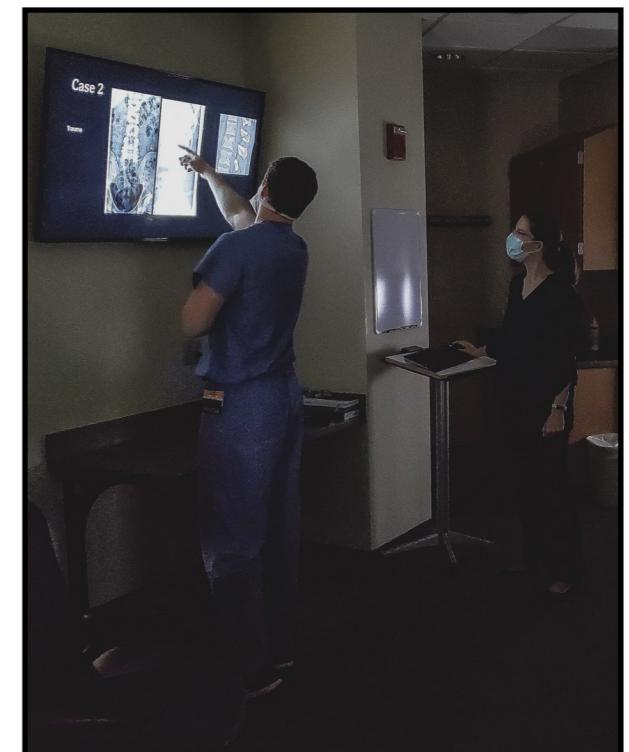
Our Breast center has the latest state of the art equipment including a tomosynthesis stereotactic biopsy unit. We provide high risk screening services that include MRI and Automated Whole Breast Ultrasound. All modalities are utilized for patient-centered diagnostic work up and a variety of procedures including breast biopsy and mass localization. All our digital mammography units are capable of tomosynthesis. We are a Breast Imaging Center of Excellence (BICOE) – a designation that is awarded to breast imaging centers that achieve excellence by seeking and earning accreditation in all of the ACR's voluntary breast-imaging accreditation programs and modules. The breast center has Accreditation by the National Accreditation Program for Breast Centers (NAPBC).



Ellis Fischel Cancer Center

As Missouri's first cancer center, the new Ellis Fischel tower at the University has many sub-specialists providing multidisciplinary cancer care. Ellis Fischel is connected to University Hospital and is the primary site for the Breast Imaging rotation. The Breast Imaging Center is well equipped with digital mammography/tomosynthesis, US, and stereotactic biopsy.

The musculoskeletal radiology service is based at Missouri Orthopaedic Institute (MOI), a free-standing orthopaedic hospital and clinic. MOI is home to a large group of subspecialty orthopaedic surgeons. In addition to high quality diagnostic services we perform a vast array of image guided spine and joint injections. MOI has state-of-the art MRI (1.5 and 3T GE), CT, and ultrasound on site.





The division of cardiothoracic imaging provides comprehensive imaging services for the diagnosis of pulmonary, cardiac, and vascular diseases.

We work closely with other clinical services including pulmonary medicine, oncology, radiation therapy and surgery. This multidisciplinary approach provides exceptional clinical care and provides robust research opportunities.

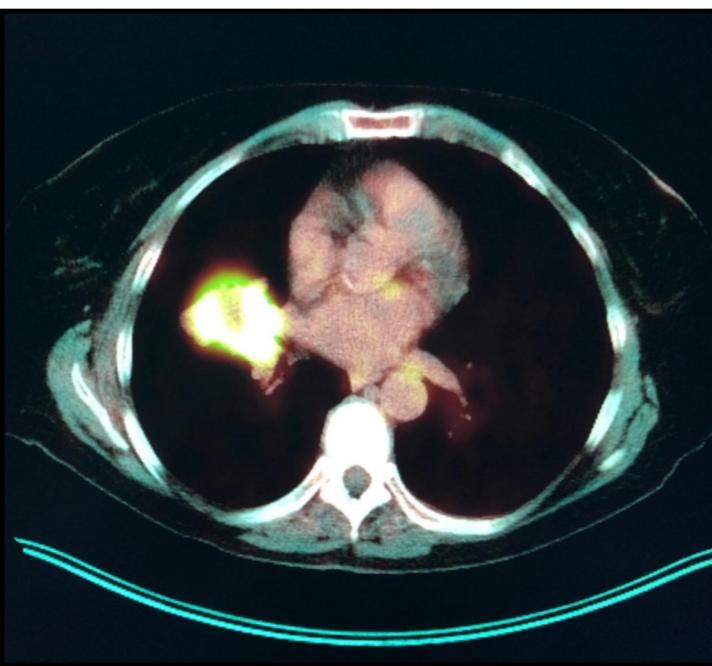


The division of Pediatric Radiology is located at the Women's and Children's Hospital, the only free-standing pediatric hospital in mid-Missouri. The hospital offers more than 30 pediatric subspecialties with inpatient and outpatient services, including a pediatric emergency room.

At WCH, there is one 1.5T MRI, one dual-energy CT scanner, two US machines, an interventional radiology suite, a fluoroscopy room, and a NM scanner. Our fellowship-trained pediatric radiologists interpret pediatric imaging studies performed at all MU inpatient and outpatient facilities.

The Nuclear Medicine division provides adult and pediatric nuclear medicine services for the University of Missouri Hospital, Ellis Fischel Cancer Center, and Women's and Children's Hospital. The division is equipped with SPECT/CT and PET/CT scanners which have full ACR accreditation. We provide nuclear medicine training for our ACGME accredited radiology and nuclear medicine residency programs.

Our center was first in the World to perform brain perfusion imaging with Tc-99m HMAPO (Certec) and Sm-153 EDTMP (Quadramet) therapies for metastatic bone cancer; and continues to be engaged in important clinical research. Recently introduced procedures include DAT scan for Parkinsonism, F-18 Axumin for prostate cancer, and Ga-68 Dotatate for neuroendocrine tumors.



The Division of Vascular and Interventional Radiology provides comprehensive minimally invasive services for the treatment of vascular, oncologic, hepatobiliary, urologic, and pulmonary diseases.

Residents develop procedural skills under the supervision of fellowship trained Interventional Radiologists. Our residents have the opportunity to be the primary operator on a vast array of cases as their skills progress.

In June 2020, we opened the only combined hybrid CT/Angiography suite in mid Missouri.

