Interventional MRI Program

The term “interventional MRI” refers to the use of Magnetic Resonance Imaging to guide a diagnostic intervention and/or to monitor a minimally invasive therapeutic procedure. This is a new branch of Radiology that is being practiced at a few institutions operating the scanner. Also, interactively reviewing the images in realtime at the scanner side in a manner analogous to fluoroscopic and ultrasound guided interventions.

For the Emory patients and medical community, launching the new “interventional MRI” service means access to a set of refined diagnostic and minimally invasive therapeutic procedures that are not available anywhere else in the region. Examples include biopsies of lesions that are only seen on MRI, lesions with difficult access, and subcentimeter lesions. MRI also can be used to guide the placement of fiducial markers within these lesions to facilitate subsequent identification at surgery or with other imaging modalities. On the therapeutic side, MRI offers a radiation-free method of treating vascular malformations via percutaneous sclerotherapy. The ability to map out the extent of these complex vascular lesions during treatment ensures proper filling of the malformation with the sclerosing material while avoiding extra-vascular injections and therefore limiting complications. Thermal ablations for locoregional cancer control is another area where interventional MRI excels beyond the currently available ablation techniques. The use of MRI to guide ablation procedures has changed the predetermined “recipe” approach to a controlled approach. The thermal damage is continuously monitored in realtime via a thermal map superimposed on the MR image in multiple planes reflecting the exact boundaries of the developing zone of ablation. The treatment endpoint is thus tailored to each individual tumor in each patient and is based on the actual response to therapy. Laser energy is particularly suited for use with MRI due to lack of interference with imaging and the easier fit into the magnet bore. The laser ablative technology has already been delivered to the interventional MRI suite and is available for use. The system offers an additional safety feature of automatic shut-off once a threshold temperature is reached at any operator-selected point in the vicinity of the tumor. Numerous additional services will be also available such as targeted MRI-guided prostate biopsies and ablations for patients undergoing the common dilemma of rising PSA (prostate specific antigen) level with repeated negative biopsy. The program also will host neurosurgeons and provide them with the necessary technical support to perform MRI-guided deep brain stimulator placements and hippocampal laser ablation.

With the addition of the new interventional MRI suite, Emory is not only joining a handful of institutions in the world that apply this state-of-the-art technology, but is rather positioned to be a leader.

Dr. Nour performs an MRI-guided liver biopsy in Emory’s new interventional MRI suite. Needle navigation is observed in realtime to target a tiny lesion that is invisible with CT or ultrasound.

-Story continued on page 7
Dear Colleagues,

I am saddened to convey to you that Dr. Ted Leigh, who was legendary for his many contributions to our department and the field of radiology, passed away on September 28. Indeed, he was a dear colleague and friend throughout his long and productive life. Below I share with you his obituary, which provides an opportunity for us to reflect on this remarkable individual.

Best to all,

Carolyn C. Meltzer, MD, FACR, Chair of Radiology

Dr. Leigh was formerly married to Midge Leigh, who lives in Boulder, CO, and later to Patricia McGouirk Leigh, who died in 1997. He is survived by a son, Robert F. Leigh, and wife Susan of Liburn, GA and daughter Peggy Leigh Baker, and her husband Bill of Boulder, CO, and grandchildren, Kristine Leigh Franks, Matthew Leigh, Allison Leigh, Alexandra Baker and Nicole Baker. His brother Douglas Leigh, who died in 1999, was a well-known advertising man in New York City.

There will be a Memorial Service at the Rock Springs Presbyterian Church at Piedmont and Rock Springs Roads on November 22nd at 4pm, which would have been Dr. Leigh’s 100th birthday.

The Family has requested that no flowers be sent. Those who wish, can contribute to the Emory Department of Radiology and Imaging Sciences. In the memo line please write Weens-Leigh Endowment Fund, which supports the work of the doctors in training in the Department of Radiology at Emory University.

Mail to:
Stacia Brown
Director of Development
Emory University School of Medicine/Woodruff Health Sciences Center, Office of Development and Alumni Relations,
1440 Clifton Road NE, Suite 170,
Atlanta, GA. 30322.

Further more, donations can also be made to:
Hospice Atlanta
1224 Park Vista Dr. NE,
Atlanta, GA 30319
AWARDS & RECOGNITION

First Radiology and Imaging Sciences Faculty Awards Ceremony

The Department of Radiology and Imaging Sciences celebrated the first Faculty Awards ceremony on September 7, 2011. The ceremony recognized the faculty of Emory Radiology who demonstrate outstanding service, patient care, mentorship, research, and leadership. With a external reviewers from other institutions, the Awards committee was able to select eight winners out of numerous stellar nominees.

Outstanding Service Award
Junior Award
Eugene Berkowitz, MD, PhD

Outstanding Service Award
Senior Award
Deborah Baumgarten, MD, MPH, FACR

Outstanding Clinician Award
Junior Award
Roger Williams, DO

Outstanding Clinician Award
Senior Award
Raghuveer Halkar, MD

Outstanding Mentor Award
Patricia Hudgins, MD, FACR

Rising Star Award
Courtney Coursey, MD

Outstanding Scientific Contribution Award
Hyunsuk Shim, PhD

Outstanding Young Investigator Award
Ji Chen, PhD

Habib Tannir Leadership Character Awards

The Turknett Leadership Character Award recognizes individuals who demonstrate character by leadership, integrity and maintaining a culture in which everyone takes responsibility for achieving results while upholding the organization’s values. Habib Tannir, Director of Imaging Services, was recognized as a nominee at the Eighth Annual Leadership Character Award ceremony on September 15, 2011. Habib's nomination was submitted by Chrystal Barnes, Assistant Director of Imaging Services, who acknowledged Habib's qualities as an inspiring leader.

Mary (Mimi) Newell, MD
Associate Professor of Radiology

As of September 1, 2011 Dr. Mary Newell was promoted to Associate Professor for her dedication and active participation in all three missions of clinical, research and educational excellence. Dr. Newell has demonstrated outstanding skills that contribute to not only her respective division but the Department as a whole.

American Association of Physicists in Medicine- Best Abstract

Ioannis Sechopoulos, PhD
Assistant Professor Radiology and Imaging Sciences

Perry Sprawls, PhD
Professor Emeritus Radiology and Imaging Sciences

At the 2011 Annual Meeting of the American Association of Physicists in Medicine, Drs. Sechopoulos and Sprawls received the Best Abstract on Innovations in Medical Physics Education Award for their abstract of, “A Model for Clinically Focused Physics Education.”

Message From Vice Chair For Research

In the November issue look for Dr. Votaw’s continuation of “Power to Pitfall” article.
Improving Transplant Options for Type 1 Diabetes

When Julie Allred heard that Emory was exploring a nonsurgical transplant solution for patients with “brittle” or unstable type 1 diabetes, she didn’t know she’d end up being first in line for the new procedure. On July 21, she became the first at Emory and in Georgia to have a minimally invasive islet cell transplant with an added bonus—no stitches.

Allred was diagnosed with type 1 diabetes at age 10. She obtained her first insulin pump in 1992 and has had several different types over the years. Even though she carefully watched her diet and tested regularly, she has had many problems in the past couple of years with unstable hypoglycemia (low blood sugar). It affected her ability to do many things she enjoyed, with the constant worry of how she would be affected by the predictable changes in her blood sugar, including being caught unaware at night while asleep. Luckily, her dog was able to alert her husband David if her blood sugar dramatically dropped during the night. But she was never free—day or night—from the worry of a condition called hypoglycemic unawareness, which unpredictably causes unconsciousness.

“I wanted to have the transplant because I’ve seen so many changes in the treatment of diabetic patients over the years, from the first glucometers to new medications,” she says. She was placed on Emory’s islet transplant wait list in early July and received the call eight days later while at her dentist’s office on July 19, which was “a record for the shortest wait,” she notes. She lives several hours from Atlanta in the Charlotte, NC, suburb of Concord, where she has worked as a nurse for the past 20 years in obstetrics and pediatrics.

Drs. Kevin Kim, director of interventional radiology and image guided medicine, and Nicole Turgeon, kidney, pancreas and islet transplant surgeon, performed Allred’s transplant in the interventional radiology suite at Emory Hospital.

“Our protocol is designed to treat patients over age 18 who have had type 1 diabetes for five years or more and experienced two or more episodes in the past year of hypoglycemic unawareness,” reports Dr. Turgeon. She is principal investigator of the study. She conferred with other centers doing the interventional radiology procedure—it’s been available for many years—and collaborated with Dr. Kim for more than a year to develop Emory’s protocol.

“We’re able to perform this type of transplant because of Dr. Kim’s expertise in image guided treatment of liver tumors in the interventional radiology suite and Emory’s experience in islet transplantation and the development of new treatment regimens to protect transplant grafts from rejection,” she says. According to Dr. Kim, “The interventional radiology procedure involves a small access, guidewires and catheters and a central line that are threaded through the patient’s right side into the portal vein, which leads into the liver. The entire system is through a less than a quarter inch skin access, and there are no stitches required but a bandage on her skin. The islet cells are selectively and accurately infused directly into the liver through the portal vein under image guidance.

There is no general anesthesia required, and the entire procedure is performed under moderate sedation. In fact, we were talking to the patient for the entire procedure.” The fragile islets should implant in the liver and take over the job of making insulin. About 300,000 to half a million islets from one deceased donor’s pancreas are infused and should be fully functional after four weeks. If the graft fails, the transplant procedure can be repeated two more times.

“Patients take immunosuppressant medications like any other transplant recipient to prevent rejection,” Dr. Turgeon says. The patient will need to have a heparin drip for 48 after the transplant to prevent clotting. He or she is evaluated 24 hours post-transplant to determine if there is bleeding around the portal vein, the primary complication from this procedure.

“The conventional islet transplant involves a two- or three-inch incision in the midline belly,” continues Jennifer Hutchinson, clinical research nurse and coordinator of the study. “This open surgical approach can be very painful and make the patient very nauseated and constipated. Mrs. Allred experienced no side effects and had to take only one pain pill following her less invasive transplant.”

Allred still has an insulin pump to help “baby and protect the islet cells” as she recuperates, but she has gradually tapered her insulin from about 50 units a day pre-transplant to 8 to 11 units a day four weeks post-transplant. She is now free from the unpredictable changes in her blood sugar and has had no hypoglycemia.

“My doctor told my mother when I was first diagnosed that I wouldn’t live to age 30 or be able to have children. But because of these advances, I’ve been able to prove him wrong twice,” Allred chuckles. Thanks to the rapid progress of diabetes treatment, she happily celebrated her daughter’s Meredith’s 16th birthday at Disney World in January of this year and turned 43 years July 23rd, two days after her transplant.

- Lee Jenkins
Freelance writer
Emory Transplant Center
Editor, Kevin Kim, MD
**GRANT AWARDS**

**Magnetic Immuno-separation and Detection of Tumor Cells within CSF samples of Pediatric Brain Tumor Patients**

*Principal Investigators:* James Provenzale, MD; Hui Mao, PhD; Tobey MacDonald, MD

*Funding Organization:* Center for Pediatric Nanomedicine, Children’s Healthcare of Atlanta, Emory University

**Significance:** Medulloblastomas (MBs) are the most common form of primitive neuroectodermal tumors of the pediatric central nervous system. Early detection of possible tumor metastasis is a key on the clinical management of this disease. With a new class of the magnetic nanoparticle cluster with high magnetism developed in Dr. Mao’s lab, this project will develop and test magnetic immuno-separation and detection system with improved sensitivity and efficiency of cell separation, enrichment, capturing and detection of metastatic MB cells in CSF. The goal of this project is to rapidly translate the latest nanotechnology developed by the research team, such as the anti-biofouling coating polymer for improving biomarker targeting efficiency and magnetic nanoparticle cluster for high magnetization, and new scientific discoveries in MB biomarkers, to the clinical pediatric neuro-oncology practice.

**IN THE KNOW**

**Quality Corner**

**Play it Safe**

I know we are all aware of the radiation exposure scares that have been reported in the media. As Radiology professionals we are acutely aware of the risk of exposure to radiation, but sometimes we take our responsibility for managing a patient’s exposure for granted. We tend to want to do what we have always done, as it relates to procedures and techniques.

Just as the risks of radiation exposure have moved to the forefront, so have our efforts to reduce radiation exposure to the patient. There are many initiatives taking place, right now, in our department, that are designed to look at how and why we image patients, and how we can modify what we are currently doing, to reduce radiation exposure. Our department is working on standardized protocols for all of our modalities and we are incorporating the use of Nano Dots to measure skin dose during invasive procedures. General Radiology at all locations is working together to find ways to measure reject rates for all exams performed, and the MSK division is working with EUH General Radiology to determine the reject rates for MSK exams, which are generally higher than with other x-ray imaging. This data will be used to develop methods to reduce repeat rates and exposure factors through staff education and training.

Health care professionals, and more particularly radiographers, must take a more active role in managing radiation exposure. When performing CT scans, fluoroscopy, and routine radiographs, exposure techniques should be adjusted to the patient type and body habitus. Smaller patients should correlate to a smaller radiation dose. Shielding should be used whenever possible, and special care should be utilized whenever fluoroscopy is used to help reduce patient dose and staff exposure.

Our promise to our patients is to provide the very best care possible. As part of the fulfillment of that promise we must consider the radiation exposure to our patients, and deliver on that promise by exposing them to as little radiation dose as reasonably possible.

-Linda Gunsby,
Manager, Imaging Sciences

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**Reminder: Reading Room Training**

EUHM Reading Rooms Tuesday, October 11th 8:00 am – 5:00 pm
EP MSK Reading Room Tuesday, October 25th 8:00 am – 12:00 pm

In addition to the above training opportunities, we will be visiting all Radiology Reading Rooms. Upcoming scheduled Reading Rooms and training dates will be posted in the Reading Rooms and the Rad Report.

-Wendy Lybrand
Radiology Informatics Trainer
STRIVING FOR EXCELLENCE

Managing in a Difficult Economy

Making ends meet have become increasingly harder in this environment. The economy has virtually crippled the well being of many households with several losing their jobs and homes. The national unemployment rate has consistently maintained a rate of about 9%. Where are people to turn in these times of need? The current economy has hit hard on us as individuals, but it has also hit the health care industry.

Health care organizations have to make cutbacks to survive while reimbursement has become a struggle. Staff at many organizations are burdened with layoffs and hiring freezes due to the economy. “We need more staff” is what many state who are unable to assess the big picture when feeling over worked. More staff is not always the answer. We must come up with more creative ways to manage staffing and maintain high quality service levels. “Doing more with less,” is a statement that many may not want to hear, but if the embattled health care organizations used this approach, they may have avoided a collapse in the organization. These times require catalyst leaders that set visions and inspire others to follow. Leaders must find solutions that will provide trust and safety for our staff, patients, and the organization.

Emory Healthcare has been able to maintain the majority of its staff without resorting to massive staff reductions, which we have seen from other metropolitan Atlanta health care organizations. Emory has sought to help in the management of FTEs (Full Time Equivalent) by instituting LMAT (Labor Management Action Team) to review and approve requested staff additions or replacements. Leaders must provide labor metrics so the team is able to review budget variances prior to approving job postings.

We must ask what we can do as leaders to maintain a high service level for our patients and still meet the budget. Perhaps, flex scheduling during slower periods of the day or hiring a 32 hour employee versus a 40 hour employee. We can’t just sit idle; we must find solutions to these issues. Even though the economy continues to suffer, patients will still need health care. There is no magic pill that will make patients better until the economy rebounds. Emory has some of the most advanced technology available in the market that greatly enhances efficiency throughout the organization. For instance, a CT Head scan that would have taken 10 minutes on an 8 slice CT scanner can be done in 2 minutes on the 64 slice scanners that are offered throughout Emory Radiology.

In conclusion, we must continue to advance our technology and find more creative ways of managing our staff, thus providing the higher standard of care that patients expect of Emory Radiology and Imaging Sciences.

- Randy Bethea, Assistant Director Breast Imaging Centers

GET INVOLVED

October is Breast Health Awareness Month

In honor of National Breast Cancer Awareness Month, EMORY HEALTHCARE is sponsoring the following events:

Extended and Saturday Hours:

EMORY HEALTHCARE and the Emory Breast Center are offering extended and weekend hours for women needing a screening mammogram. Call 404.778.PINK to schedule an appointment; standard rates apply.

- Saturday hours - Midtown Campus Screening Mammograms
  8 am to 2:30 pm on October 8th, 15th & 22nd
- Extended hours - Winship Campus Screening Mammograms
  Noon to 7 pm on October 17th, 19th & 20th

Tuesday, October 11 - 4:30 to 6:00 pm:
Annual Free Breast Health Screening Event

Call 404.778.7777 to register for this event at the East Clinic. Light refreshments will be provided along with door prizes.

To register or for more information, call 404-778-7777 or visit www.emoryhealthcare.org/breasthealth.
Emergency Radiology Division

The Division of Emergency Radiology was created in the Spring of 2010. Within the last year Emergency Radiology has expanded their services and continues to provide quality patient care to their patients. Based at EUHM, Emergency Radiology provides final study interpretation with the Emergency Departments at EUH, EUHM and for emergent studies at other sites.

The ER faculty division is committed to covering the stat inpatient and outpatient examinations, which will shorten hospital stays and improve services to patients. ER continues to develop their relationship with Emergency Medicine. Working closely with the Emergency Medicine Department, the ER faculty members are able to ensure imaging protocols are optimized, and establish effective communication with Emergency Department colleagues to offer a high quality of care to patients at all hours.

The ER division will continue to establish key components to maintain quality and efficient service for its growing population of patients. One of many goals for Emergency Radiology is to expand its services to a 24/7 operational division. The division will continue to grow its staff by recruiting full-time faculty members and will also continue to recruit for the newly developed Emergency Radiology fellowship program which currently has two new fellows, Justin Rafael, MD and Jaideep Rampure, MD.

In the Fall of 2010, Dr. Johnson was recruited to Emory as Assistant Director of Emergency Radiology, he worked closely with Interim division director William E. Torres, M.D. to optimize workflow, recruit new faculty, and successfully establish a fellowship program. Recently, Dr. Johnson was promoted to the Director of Emergency Radiology. He will help guide the division in being a leader in serving not only the Emory Healthcare community but also fostering research and discovery in the emerging field of Emergency Radiology.

Interventional MRI Program continued from page 1

in the field with a comprehensive multifaceted clinical and research program for MRI-guided interventions. At Emory, our team enjoyed the privilege of building the interventional MRI suite from the ground, thereby avoiding several logistic confounders that exist at other institutions. The wide array of clinical and basic science expertise available at Emory backs our belief that the broad scope of interventional MRI applications and potential innovations will be fully active under this program. The extensive and lengthy groundwork over the past year was an excellent opportunity to realize the core strength of our program: our people. The committed support of the department’s leadership and administration; the enthusiasm and proactive approach of MR technologists, nurse practitioners, and nurses, the supportive interest of colleagues… all signify the real assets of this program and reinforce our confidence in its bright future.

--Sherif Nour, MD
Director, MR-Guided Intervention

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For times & locations visit the website:
www.radiology.emory.edu
Kei Yamada, MD
Assistant Professor - Interventional Radiology
Dr. Yamada joins the faculty of Emory Radiology as an Assistant Professor after completing a Vascular Interventional Fellowship at Stanford Medical Center.
Dr. Yamada was awarded the Magna Cum Laude for Educational Exhibit at the 2007 Society of Thoracic Radiology conference where he presented, “MDCT Evaluation of Congenital Airway Abnormalities Presenting in Children and Adults.” Dr. Yamada has contributed to many publications; his most recent publication is titled, “Electronic Messaging System for Communicating important, but Nonemergent, Abnormal Imaging Results.”
He received his Medical Degree at the University of California, San Diego before completing an internship at Cedars-Sinai Medical Center. He completed his Radiology Residency at Beth Israel Deaconess Medical Center.

Faisal Khosa, MD
Assistant Professor - Emergency Radiology
Dr. Khosa is Board Certified Radiologist in Europe, Canada and USA. He has a Level 3 Certification with the Society of Cardiac Computed Tomography and the Society of Cardiac Magnetic Resonance. He has interest in the medical field focusing on fellows and residents curriculum development. His research interest is multi-modality Cardiovascular Imaging.
Dr. Khosa has completed clinical fellowships in Oncoradiology, Cardiovascular Imaging, Emergency Radiology, Body MRI and Neuroradiology from Beth Israel Deaconess Medical Center, Harvard Medical School. In addition, Dr. Khosa completed his radiology residency, Interventional Radiology and Cross-sectional Imaging Fellowships in Ireland.
Dr. Khosa received his Medical Degree from Allama Iqbal Medical School in Pakistan before completing his internship at Services Hospital, Lahore, Pakistan.

Jing Huang, PhD
Post Doctoral Fellow- MR Research
Dr. Huang’s research efforts have focused on developing novel MRI agents for biomedical imaging applications. Her current research is focused on magnetic nanomaterials-based nanotheranostics for targeted cancer imaging and therapy. Dr. Huang received her PhD in Inorganic Chemistry from Peking University, China in July 2010.

HR Tip
Take ACTION for Annual Enrollment 2012!
Emory University and Emory Healthcare
Everyone will need to participate in annual enrollment!
Even if you are not making any changes to your benefits for 2012, you MUST log on to e-Vantage or PeopleSoft self-service to complete your certifications for the Tobacco Surcharge and the Spouse/SSDP Medical Charge, if you have a covered spouse/SSDP.
Please note that if you do not complete these certifications, charges will automatically apply. Emory will not issue refunds.

Save the Date
ANNUAL EMMORY RADIOLOGY ALUMNI RECEPTION
Monday, November 28, 2011
6:30 p.m. to 8:30 p.m.
Camelot Ballroom
InterContinental Chicago Hotel
Camelot Ballroom
505 North Michigan Avenue
Chicago, IL 60611

Look for a new issue of the Rad Report the first full week of November