In 2005, Dr. Ji Chen developed a software technique called Phase Analysis to measure left-ventricular mechanical dyssynchrony using myocardial perfusion imaging. After several years of continuing development and testing, this technique became quite robust and well known in the nuclear cardiology community. He was able to show clinical data to provide evidence that this technique could be used to predict patient response to Cardiac Resynchronization Therapy (CRT). CRT is a standard treatment for moderate to severe heart failure, but only 60-70% of the patients with CRT respond to it with improved clinical symptoms and/or cardiac function. Based on the clinical data, it was evident to him that the Phase Analysis technique could improve the CRT response rate at about 85% by optimizing the location of the left ventricular pacing leads.

Dr. Chen received an NIH R01 grant in 2009. The most important goal of this grant was to clinically validate the Phase Analysis technique for incremental CRT efficacy in heart failure patients. With the help of Dr. Ernest Garcia, he invited four clinical experts in cardiovascular imaging to an advisory meeting in Atlanta in March 2010. That afternoon Dr. Chen listened to clinical perspectives and received advice on his Phase Analysis technique, and most importantly, he was encouraged to pursue a multi-center clinical trial to validate the Phase Analysis technique for predicting CRT response. His next step was to engage several companies, such as Medtronic, Boston Scientific, St. Jude Medical, and Biotronik, who make CRT devices. With the goal of partnering with these companies, Dr. Chen moved forward to explain how Phase Analysis would improve the efficacy of their products.

Looking back, the advisory meeting was a smart investment, because the right strategic move is invaluable. However, that move did not appear to be correct over the next few months. As Dr. Chen moved to implement the strategy, his encounters with the companies were unfruitful. He approached Medtronic and Boston Scientific who liked his science but with the financial downturn they did not have funding to support a major multi-center clinical trial. Dr. Chen was advised to make the project into a smaller, single-center study, and they might fund it as an investigator-initiated study. After following their advice, he was rejected again.

In the Summer of 2010, an interesting conversation turned on a light in Dr. Chen’s mind. He came across a finance professor from Emory Business School. Dr. Chen chatted with him about the technology and explained about his failure to secure a clinical trial. The finance professor suggested reading the public financial reports of the companies to find out their business strategy. Dr. Chen took his advice and read Medtronic Inc. financial reports. Dr. Chen commented, “A scientist read financial reports? Yup, fortunately I did it. The reports showed a drop in quarterly sales. The company saw a weak demand for cardiac rhythm and spine products. Since the economic market was not the best here, I decided to pursue my mission in my home country of China.”

China is one of the biggest emerging markets. Would Medtronic be interested in doing clinical trials in China? With that idea in mind, Dr. Chen began contacting collaborators in China and was then connected to the cardiology chairman of Nanjing Medical...
Dear Colleagues,

The Sequester. This is a term no one had heard of until Washington coined it for scheduled automatic, deep, and non-strategic spending cuts designed to hold Congress’s feet to the fire on balanced spending/taxation legislation. Now, we find ourselves at the precipice of these cuts, which were never meant to become reality. So that which was intended to be a deterrent or “stick” has transformed into an impending self-inflicted national wound.

I hope that by the time the Rad Report is issued, sequestration has been averted. But all signs currently point to a low likelihood of its avoidance. What does sequestration mean for Radiology, for Emory overall, and for the academic community? The main immediate concern is the implementation of substantial cuts to the NIH budget. Grant paylines are already depressed due to several years of NIH budgets that have failed to keep up with inflation. An additional 5.1% reduction will be a further challenge. With the NIH’s extramural program likely to absorb more than its share of these cuts, estimates for the impact to Emory University’s research program through the end of the fiscal year tops $20 million. Our departmental share in the short term will be over $220,000.

The Association of American Medical Colleges (AAMC) and the Academy of Radiology Research are examples of organizations that represent our interests in Washington and both have heavily advocated for greater (not lower) investments in NIH and biomedical research. Emory is also playing a leadership role in an Academic Health Center Working Group that helps lawmakers understand the roles, accountability, and economic contributions of top academic institutions. The Emory School of Medicine GameChangers campaign, which highlights the impact of Emory discoveries on the care of our patients, also creates greater awareness of the importance of research and innovation.

In so many ways it is a very exciting time in research, with the blossoming of new technologies and novel intersections among existing disciplines. Recently, the White House announced a commitment to an exciting decade-long Brain Activity Map effort similar to the comprehensive Human Genome Project. Join me in advocating for the importance of research by writing to your representatives in Congress.

Best to all,
- Carolyn C. Meltzer, MD, FACR
Chair of Radiology and Imaging Sciences

MESSAGE FROM THE VICE CHAIR FOR RESEARCH

Leadership in Times of Change

Are you the leader? (Sometimes you are.) Or, are you looking for someone to follow? (Sometimes you do.) Millions of years of evolution have programmed us to be part of a group. At the most fundamental level, we are designed to know that it is in our best interest to be cooperative and social. If fact, humans cannot survive without being part of a group. If different aspects of our lives and in different roles at work we are at times leaders and at times followers. When following, people want a strong leader who can clearly communicate their vision. When leading, your objective is to transmit the vision of your leaders to your followers.

Our industry, healthcare, is going through a change. Our vision for the future is a more evidence based approach to patient care. Success will be determined first by patient outcome, then quality of care, then cost of care. If two imaging tests have equivalent impact on patient outcome, the least expensive will be adopted. In the past, the decision between two tests having equivalent impact would be made on other criteria, such as the test that gives the most additional information (even if it is not directly impactful on patient outcome) or just ordering both tests. In the past there were “what if” and “just in case” tests ordered that will not be part of future standard of care. So, there will be changes in how we conduct our business. The way we treat patients will change and the research questions that need to be answered will change.

Change brings anxiety. Regardless of whether you are the leader or follower, know that the followers work through five questions when dealing with change (as described by Tom Bell, Emory board of trustees). They are:

1) What are the leaders doing?!
2) Why are they doing this?
3) What do they expect the results to be?
4) What does it mean for me?
5) How can I help?

Going through these stages lets everyone evaluate the situation. When you are a leader, be ready to answer these questions. When you are a follower, ask the questions. In either case, don’t skip any of them.

Change is initiated to give the organization the greatest chance to succeed in a new environment. Inevitably, it will help some people and hurt others. In its implementation, we will be guided by the second principle of SEL, courtesy. This demands that we communicate honestly but with empathy to all those affected. Some people will opt out – they decide they would do better elsewhere, which is a decision we will respect. In this case, we pledge to make their transition as easy as possible. To those who stay, I look forward to working with you and embracing the final question – how can I help?

- John Votaw, PhD
Vice Chair for Research
**AWARDS & RECOGNITION**

**Wangail Assamenew**  
Executive Park Reading Room Coordinator  
Bachelors Degree  
Science in Human Services  
Wangail recently received her BA in Science in Human Services. She has been with Emory for 13 years. She is currently the Executive Park Reading Room Coordinator. Her area of focus is counseling children who suffer from mental illness.

**Barbara Walton**  
TeleRadiology Manager  
Bachelors Degree  
Early Childhood Education  
Barbara has served the Department of Radiology and Imaging Sciences for 31 years. She recently earned her Bachelor of Science Degree in Early Childhood Education and Human Services from Shorter University. She is currently a TeleRadiology Manager.

**EUOSH Accreditation**  
Emory Orthopaedic and Spine Hospital  
Gold Seal of Accreditation  
The EUOSH team achieved the Gold Seal of Accreditation from the American College of Radiology. This certification affirms our commitment to providing the highest level of image quality and patient safety.

**Merrill’s Award**  
The Merrill’s Committee would like to acknowledge Veena Rajeevan for earning the January Merrill’s Award! Veena is Diagnostic X-ray Supervisor in WCI. She earned the award based on the submission of bilateral knee images with excellent positioning and technique. Please join us in congratulating Veena for her outstanding commitment to image quality!

Interventional Radiology  
Emory University Hospital Midtown  
90th Percentile Patient Satisfaction  
Congratulations to Interventional Radiology for having all four quarters of FY12 at or above the 90th percentile patient satisfaction. The team celebrated on February 14 with a reception at EUHM. They were presented with a plaque honoring their accomplishments.

---  
- *International Collaboration: The Curvy Start*, continued from page 1

University, who was a vice president in the Chinese Society of Electrophysiology and Pacing. Dr. Chen visited him and proposed his idea in August 2010.

Two weeks after the visit, Dr. Chen received an email from Nanjing. He was informed that the Medtronic Medical Director expressed a great interest in his idea – doing a major clinical trial on CRT in China. Dr. Chen recalls, “I quickly followed up by calling his office in Minneapolis. After about 10 attempts, his secretary finally got him on the phone with me at almost 7 pm. After a short greeting, I started my 30-second elevator pitch …”

“I heard you are interested in doing a multi-center trial on CRT in China. I have a nuclear imaging technology …”

“How much money do you need?” I was interrupted in just a few seconds. “I am not talking about money. I just want to show you what I have.”

“Good. Please go ahead schedule a meeting with my secretary.”

“Thank you!” Hooray! I hung up the phone.”

On September 15th, 2010 Dr. Chen visited the Medtronic Headquarters for a meeting with the medical director, head of R&D clinical trial manager, several scientists, and the marketing and sales team. The business director of Greater China connected through remote access from China. Those two hours were very stressful, but Dr. Chen managed to stand still and talk slowly. After many technical challenges and clinical debates, Dr. Chen presented a few slides with what he had read from their financial reports and was determine to convince them a trial in China benifit all those involved. Dr. Chen recalls, “I made everyone laugh, and the meeting concluded.”

In October 2010, Dr. Chen received a call from the Head of R&D with a decision to develop the trial protocol. Dr. Chen went to China in December 2010, and had multiple meetings with the clinical investigators and R&D people from Medtronic China. They planned out the trial design and named it GUIDE-CRT (SPECT-guided LV lead placement for incremental benefits to CRT efficacy). Since GUIDE-CRT would be funded as an investigator-initiated study, the investigators should write the trial protocol. As the best English writer among the Chinese investigators, Dr. Chen wrote the trial protocol. He commented, “An imaging physicist writes the protocol of a multi-center clinical trial? Oh yeah, that was what I did. I happily did it!”

The clinical trial of GUIDE-CRT was officially launched on February 24th, 2012. Today, Dr. Chen continues to travel to China, as they work through the processes of the clinical trial. To be continued.

- Ji Chen, PhD  
  Associate Professor, Nuclear Cardiology R&D
Quality Corner

Pacemakers in the MRI Scanner?

Cardiac Implantable Electronic Devices (CIEDs) including pacemakers and implantable cardioverter-defibrillators, are generally thought to be contraindications to magnetic resonance imaging (MRI) due to safety concerns, including the potential for metal parts to heat up and for the device to malfunction in the MRI scanner’s strong magnetic field. Approximately 75% of patients with CIEDs will develop an indication for MRI. In the past several years, there have been published trials showing that MRI of CIEDs can be safely performed if strict safety precautions and a standardized protocol are used.

In collaboration with Cardiac Electrophysiology, our department has developed a policy that outlines in detail the process for obtaining an MRI on a patient with a CIED at EUH and EUHM. A Radiologist reviews the request for the MRI, and determines whether to proceed with MRI or recommend an alternative test. The policy defines strict exclusion criteria, and uses a standardized protocol with detailed screening and evaluation of the CIED prior to and following the MRI scan. Vital signs and heart rhythm are continuously monitored during the scan.

The Centers for Medicare & Medicaid services has only approved reimbursement of MRIs in patients with CIEDs who are enrolled in an IRB-approved trial. All patients with CIEDs undergoing MRIs have the opportunity to enroll in this research study to determine whether or not their MRI affected their clinical management.

Since our department began scanning patients with CIEDs in January 2011, we have scanned over 50 patients, have had no major adverse outcomes, and only 2 minor device malfunctions detected immediately following scan completion.

Emory is one of the few MRI sites around the country imaging patients with CIEDs, and we believe we have established a safe and effective process for these patients.

- Amit M. Saindane, MD
  Chair, MRI Quality & Safety Committee
  Director, Division of Neuroradiology
- Bobbie Burrow, RT
  MRI Manager, Emory Hospital and Emory Clinic

Check It Out


In Our Thoughts

Poppy Yolanda Jackson, PRN

On December 16, 2012, the Radiology and Imaging Sciences department of Emory University lost a dear friend and employee-Poppy Yolanda Jackson. She began her career at Emory in 2009 and worked as a diagnostic medical sonographer at Emory University Hospital Midtown and the Emory Clinic at Clifton campus. She displayed unwavering faith and courage throughout her difficult and painful battle with cancer. Yolanda touched the hearts and lives of all those around her. She leaves to cherish her memories, her husband Reuben Jackson and three daughters, Kenitia Coleman, Kharia Belgrave and Kyndal Jackson (and countless other family members and friends).

The staff of both Emory campuses rallied around Yolanda and her family throughout her nearly three year battle. Fund raisers were held several times on both campuses, yearly Christmas "wish lists" fulfilled, hot meals provided, and unmeasurable random acts of kindness were provided by Emory staff.

The family of Poppy Yolanda Jackson has expressed their heartfelt thanks and appreciation for the kindness, support, love, comfort and prayers that have been extended.

- Emory Healthcare Ultrasound

Getting To Know You

Physics and Computing – Clinical Service

Clinical service is an important role filled by many research faculty in the Department. Their services include calibration and quality control of instruments, design of image processing software, and support of clinical research activities. Jonathon A. Nye PhD, a member of the Physics and Computing division, spends about 10% of his time supporting the Emory hospitals and clinics. He collaborates weekly with physicians and technologists in the Nuclear Medicine and Molecular Imaging division to optimize imaging protocols, evaluate image quality, monitor patient/occupational radiation safety, and provide physics instruction to the medical residents. Currently, Dr. Nye is working to calibrate all of Emory’s PET/CT scanners to the same reference standard. PET provides fully quantitative image data and is most commonly used for cancer staging in conjunction with [18F]FDG. The quantitative nature of this modality should allow for any one of Emory’s four PET cameras to produce the same quantitative image no matter where a patient is scanned. However, this is not close to being true. There are a variety of variables that lead to quantitative differences of 20% or higher between two different cameras. Even two different models produced by the same manufacturer show large differences. To get around this problem in practice, patients are scanned on the same camera. Therefore, differences between the baseline and subsequent staging scans can be compared.

Dr. Nye has been measuring the quantitative accuracy of Emory’s PET scanners using resolution phantoms. Each PET camera has its own characteristic quantitative curve which is a plot of the radioactive recovery as a function of object radius. As objects get smaller, the scanners underestimate the true radioactive concentration. No scanner can perfectly resolve objects of all sizes, thus we expect to see a sigmoid shaped curve like that in figure 1A. Ideally these curves would lie on top of each other, thereby signifying that their quantitative accuracy is the same.

Dr. Nye and students from GA Tech’s Department of Medical Physics have been working to calibrate all scanners such that they are quantitatively equal. In addition, they have been developing a theoretical framework to extract information from these data such as contrast recovery and system resolution, which are represented by the solid lines in Figure 1A and B. Progress has been made in making the systems more harmonious as shown in figure 1B. Notice that all data points lie nearly on top of one another and the slope of the sigmoid curve in figure 1B is steeper than figure 1A. These attributes indicated high quantitative accuracy across scanners and improved radioactive recovery.

- Jon Nye, PhD
  Assistant Professor
  Physics and Computing
The Effects of Change on Staff

In last November’s RAD Report, Chrystal Barnes of EJCH wrote an excellent article on the effects of change on staff. I decided to borrow her topic and use it, as it applies to the recent integration of the Center for Systems Imaging (CSI) and the Biomedical Imaging Technology Center (BITC) into a single Core, CSI/BITC. BITC was a Core facility of the Emory School of Medicine and a research center of the Wallace H. Coulter Department of Biomedical Engineering, a joint department of Georgia Tech and Emory University.

CSI and BITC shared a similar mission and the same goals of performing cutting-edge research in MRI and biomedical imaging. Both provided a cross-disciplinary scientific, administrative, and educational home for imaging science at Emory. So from a business process perspective, integrating the technical strengths and resources of the two Core facilities into one Core made sense for achieving greater efficiencies and allowing SOM to provide increased support in MRI imaging services to Emory’s investigators. But from the human perspective, Chrystal was right when she said “change takes us out of our comfort zone”; when you are working through the details of change, relating to the integration of two separate Core facilities and their personnel, what people begin to notice and fear is the ending of the familiar. People worry when the ways of doing things day-to-day that they have grown used to and comfortable with in their job begin to end and they are not sure what is going to replace them. So our Directors worked hard to make the change familiar to everyone quickly.

Soon after SOM’s decision to integrate CSI and BITC into one Core became effective, our CSI/BITC Program Directors moved fast to identify common day-to-day problems and issues in each Core’s imaging services that could benefit from the expertise of the staff in the other Core. Staff from BITC began working on Emory investigators’ studies at CSI. We all started looking at the differences in the ways imaging services were being performed at the two Core facilities and are working together today to identify changes required to make MRI imaging services the same for Emory studies at either facility. CSI problems and BITC problems have become CSI/BITC problems in our meetings and discussions. It must be the power of vision thing Chrystal was talking about. It doesn’t take long for people helping each other and working together in solving problems for the first time to realize the “possibilities” and dispel the fear of change. The power of a shared vision is indeed great.

We are confirming at CSI/BITC that if you allow staff members to participate and help create the change, most will respond favorably to change they help create.

- Orman Simpson
  Assoc. Clinical Administrator

Introduction to Academic Radiology Program

At RSNA this past November, 2nd year Resident Meg Fleming attended the Introduction to Academic Radiology (ITAR) program. The program is comprised of many second-year radiology residents from across the United States as well as trainees from international programs. The four-day course provides a variety of didactic and interactive sessions, which span a range of topics, including manuscript writing, finding a mentor, developing a research question, and preparing oral presentations, as well as providing opportunities to consider in academic radiology practice. Other interesting topics included: how to gracefully end an unsuccessful mentor relationship, research ethics, and the pros and cons of academic radiology versus private practice.

One particularly compelling lecture by Dr. Richard Gunderman from Indiana University was entitled “Academic Pathways.” At the beginning he told the audience that he really was not there to provide information about academic pathways, but rather some thoughts to consider when making the choice to enter an academic career. He mentioned that there were certain goals that radiologists may have that lead them to academics, which include the pursuit of power (i.e., moving up the hierarchy from assistant professor to division head, department chair, dean, etc.), knowledge (i.e., developing new research studies, helping patients and referring physicians to diagnose disease, etc.), as well as pleasure (i.e., monetary compensation, vacation, expensive cars, etc.). “But what about joy?” he asked, “How will you find joy?” He continued by describing how pleasure and joy are different, noting pleasure is more readily attained, such as when eating a great meal or listening to your favorite band. Joy, however, is a much different and complex feeling, which may include being in love or developing a meaningful relationship at work. Joy is not as easily realized. He described how joy can be found at work, which involves fostering relationships and more than just going through motions; in other words, really being present. Dr. Gunderman concluded by tasking us to find joy at work the following week. “Have a conversation with someone at work that truly brings you joy,” he challenged. It was an interesting assignment and certainly deserves some thought and effort.

If you are interested in attending or learning more about the ITAR program, more information can be found at https://www.rsna.org/Introduction_to_Academic_Radiology.aspx. Meg is also available to talk to anyone who wants more detail. Even if you are not interested in the ITAR program, she encourages you to find joy at work, because it certainly makes for a much more fulfilling day.

- Meg Fleming
  2nd Year Resident
GET INVOLVED

Service Excellence

Important Dates

Town Hall Open Mic

Our Town Hall gatherings reflect the spirit of open communication and transparency and will help all stakeholders to identify with the goals of the department and inspire involvement as we continue to strive for excellence. Bring your questions.

Save the Dates:

7:30 to 9:00 AM

**Thursday, April 4** – Live from Clifton Campus

**Thursday, July 18** – Live from Midtown

**Thursday, November 7** – Live from Clifton Campus

Share your Stories

Share a story of a Service Excellence change or success in your area, or a story of Harm or Charm. Once your story is submitted you will receive a departmental badge holder. Send your story to Camille Dingle (cdingle@emory.edu) or stop by the Communications Offices EUH – CG 23. We look forward to hearing your stories and learning together as a department. (One badge per person.)

Please look for email communication from Radiologycomm for future dates of upcoming classes and events. Also, there will be SEI tables in centralized locations throughout Emory Radiology. You will have a chance to submit a story of Charm or Harm to receive your custom badge holder. The committee will also be willing to quiz individuals who have not received their SEI pins. Dates will be sent through email when SEI tables will be in your area.

---

HR Tip

Emory University Department of Learning & Organizational Development

Emory University Department of Learning & Organizational Development offers a host of courses filled with dynamic content to meet your professional development needs and interests. Many of the courses offered are at no cost to the department. The General Enrollment courses offer participants great flexibility to choose the courses they want to take. You can customize your professional development by choosing courses from any of the categories and you are not required to take all the courses listed within any category.

Registration has been made simple with the introduction of the Emory Learning Management System (ELMS). Instructions on how to enroll for courses are provided at [http://www.emory.edu/elms-training/learner/Dropping-Enrollment-Activity.html](http://www.emory.edu/elms-training/learner/Dropping-Enrollment-Activity.html)

- Season Lewis, HR Senior Associate
GET INVOLVED

Rad Report Revamp

In the Fall of 2012, the Department of Radiology and Imaging Sciences Communications team distributed a department-wide survey regarding the Rad Report newsletter. The survey measured whether the newsletter focused on the issues most important to faculty and staff.

A total of 181 participants (faculty and staff) completed the survey. Overall, the results showed that faculty and staff view the newsletter on a monthly basis, and find it informative and interesting. The two highest read sections were New Faces and Appointments, and Awards and Recognition. Many participants would like to see more staff-related stories, and more pictures of faculty and staff at events. These results will serve as a baseline to measure our progress moving forward following our newsletter revamp. The primary goal of the newsletter is to serve as a vehicle to communicate across all divisions and create a better understanding of how each individual contributes to the department as a whole.

In the upcoming months, the communications team will be revamping the newsletter. The newsletter will eventually have a new design, layout and additional columns like, stories of Charm and Harm. The communication team will continue to create a balance of newsletter content that will appeal to stakeholders. You are also encouraged to submit your stories or suggestions that you would like to see in the Rad Report. When submitting content for consideration, please copy your supervisor, manager or director. If you would like additional information, please email Camille Dingle (cdingle@emory.edu).

Thank you for your participation
- Camille Dingle, MBA, Communications Specialist

NEW FACES & APPOINTMENTS

Minzhi Xing, MD
Research Associate - MSK
Dr. Xing joins the Department of Radiology and Imaging Sciences as a Research Associate in the MSK division. She earned her medical degree from the University of Sydney graduating with honors. Dr. Xing also received the Dean’s Award for outstanding research and was a Rugby Winger at the University of Sydney.

Waqas Shuaib, MD
Research Associate - Emergency Radiology
Waqas earned his Medical Degree from Universidad Iberoamericana (UNIBE). He recently joined our department as a Research Associate for Emergency Radiology. Prior to Emory Waqas was the CEO of USMLEplatform.com, a USMLE board preparation resource that prepared students for the exam.

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