Dr. Hui Mao’s lab was recently awarded a new five-year R01 grant from NIH to develop and test magnetic resonance imaging (MRI) and magnetic spectroscopy (MRS) methods to identify and investigate brain tumors carrying mutations in an enzyme called isocitrate dehydrogenase (IDH). In the groundbreaking discovery reported just a few years ago, IDH mutations were found to be linked to the prognosis and progression of diffuse low-grade brain tumor. The presence of the mutations in IDH1 or IDH2, which are found in roughly 70 percent of low-and intermediate-grade gliomas, means patients generally survive longer, but they don’t respond as well to standard radiation and chemotherapy treatments.

Intensive research was conducted to study the role of this mutation in brain tumor biology, which could help develop novel treatments for brain tumors. Mutations in the genes IDH1 or IDH2 cause a distortion of cells’ metabolic cycles and the accumulation of a unique “oncometabolite” metabolite, 2-hydroxyglutarate or 2HG. Mao’s lab is one of several labs in the world to first report the detection of 2HG, a marker of IDH mutations, in brain tumor patients using advanced MRS techniques. Their methods allow for the examination of a brain tumor based on its genetic and metabolic fingerprint, providing patient specific information for personalized treatment and the possibility of repeated and non-invasive monitoring of tumor progression.

This newly funded study is aimed to both only non-invasively detect the IDH mutation in brain tumor patients, and follow the activity of the mutant enzyme in patients through quantitative measurement of 2HG using MRI and MRS. The imaging capability developed by Mao’s research team; with collaboration from the departments of Neurosurgery, Biomedical Engineering, Pathology and the Winship Cancer Institute; may add important information in clinical management of brain tumor patients.
Letter from the Chair
Precision Medicine and the Future of Radiology

The term “personalized medicine” is being usurped by “precision medicine”, which attempts to characterize the complexity of human disease as a collection of population subgroups with shared genomic or pathophysiologic features. Such features help to break down the heterogeneity of diseases such as cancer into meaningful subgroups. For example, if breast cancer were a single disease, then why is it that some patients are responsive to treatment and others are not? Tumor biomarkers such as estrogen receptor density correlate with response measures, and imaging of this receptor expression as a means to characterize disease (particularly when multifocal or difficult to biopsy) is an area of research development. There has been much recent public focus on a genetic predictor of breast cancer, i.e., that of a mutation of the tumor suppressor gene, BRCA1, associated with an 85% risk of breast cancer by age 65. (The actress Angelina Jolie underwent a double mastectomy when she discovered she carried this gene.) The precision medicine construct suggests that we should be characterizing diseases by their molecular fingerprint, which confers disease expression and course, rather than by organ of origin or cell type.

What is the role of imaging in a future where the physical or radiologic appearance of a disease is less important than its molecular makeup? Quantitative and molecular approaches are needed to translate biomarkers of disease behavior into evidence-based clinical imaging. An example of where we already do this well is clinical PET imaging of malignancy; here a quantitative measure of metabolism can help confirm diagnosis, predict and monitor therapeutic response, and offer prognostic information. Promising additional examples include MRI-based stratification of tissue signal and dynamic enhancement characteristics that correlate with genetic and molecular determinants of disease trajectory.

Going forward, we need to continue to focus our imaging innovation to better characterize markers of disease (and health), engage with colleagues in other clinical and basic science disciplines to identify the most important questions in precision medicine, and translate innovation into clinical, targeted imaging approaches.

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

30th Annual Weens Lecture
Femto-Photography: Trillion Frames Per Second for New Imaging

The 30th Annual Weens Lecture and Resident Alumni Reunion will take place on Friday, September 27th at 6:30 pm in the Woodruff Health Sciences Center Administration Building Auditorium. The evening will feature a presentation by Ramesh Raskar, PhD, Associate Professor of Camera Culture at MIT Media Lab.

Raskar is an Associate Professor at MIT Media Lab and heads the Lab's Camera Culture research group. He joined MIT from Mitsubishi Electric Research Laboratories (MERL) in 2008. His research interests span the fields of computational light transport, computational photography, inverse problems in imaging and human-computer interaction. Recent projects and inventions include transient imaging to look around a corner, a next generation CT machine, imperceptible markers for motion capture (Prakash), long distance barcodes (Bokode), touch+hover 3D interaction displays (BiDi screen), low-cost eye care devices (Netra, Catra), new theoretical models to augment light fields (ALF) to represent wave phenomena and algebraic rank constraints for 3D displays(HR3D).

Raskar is a recipient of the TR100 award from Technology Review, Global Indus Technovator Award, Top 20 Indian technology innovators worldwide, Alfred P. Sloan Research Fellowship award, Defense Advanced Research Projects Agency (DARPA) Young Faculty award and many other awards. He holds over 40 US patents and has received four Mitsubishi Electric Invention Awards. Raskar is currently co-authoring a book on Computational Photography.

RSVP by Friday, September 20, 2013 to https://emoryradiology.wufoo.com/forms/weens-lecture-rsvp/
Questions? Contact Alaina Shapiro at abshapi@emory.edu
Message From the Vice Chair for Research
Our Research – Something to be Proud Of

In the past year there were funding challenges facing our scientists. The NIH can only fund about 1 out of 10 applications it receives, medical device manufactures face a new tax and other uncertainties from the Affordable Care Act, and the economy has caused companies to scale back their external research support. Despite these challenges, our investigators have been leaders in their fields. Combined, we received $8.2M in new grants and contracts in FY12, a record for our Department. New awards were given to 25 faculty members ranging between a thousand dollars to collect pilot data to over a million dollars to support clinical trials.

A few of the success stories are:

- Hui Mao’s research that is detailed in the cover story of this RadReport issue.
- Xiangyang Tang received a major industrial award to develop the next-generation CT scanner (see the January Rad Report where I highlighted his research).
- Baowei Fei’s application to improve prostate biopsy accuracy using real-time 3D ultrasound. This grant scored in the top 1% for his program.
- The continuing excellence of Tip Taylor was recognized by a MERIT award, a very prestigious award given only to those who have demonstrated continued excellence over an extended career. It will support the development of renal tubular tracers over the next five years.
- The largest award went to Hyunsuk Shim, who pulled together a multi-disciplinary multi-departmental team to develop MRI methods to predict therapeutic response to cancer treatments, and to use them to evaluate the new and very promising SAHA treatment.

Most of our grants deal with developing and testing new devices or treatments but there is a trend towards investigating the best diagnostic pathway among existing options. This is a vital area that will allow national healthcare treatment and policy decisions to be based on solid evidence.

I am very proud to be associated with all of the investigators in our department – from the beginners who I can help get started (come see me) to the established scientists who fill me with wonder at their new findings.

Join us for the Research in Progress (RIPs) seminars held every Wednesday at 1:30 pm in room N120 to learn more about the latest research in our department.

John Votaw, PhD, Vice Chair for Research

Expanding Services
The New Pediatric Center

The Pediatric Division has embarked on a new model of integration with Children’s Healthcare of Atlanta (CHOA). The new venture between Emory and CHOA is called the Pediatric Center; it will allow CHOA to directly manage the Pediatric Division’s clinical operations. The goal of this collaboration is to build a stronger partnership between our physicians and CHOA. One major change as of July 2013 is that the Pediatric Division’s patients will receive their bills from CHOA instead of Emory.

Later this fall, individual physicians in the Interventional Radiology and Neuroradiology divisions will begin participating in the Pediatric Center venture to continue to grow a comprehensive sub-specialized pediatric radiology practice. The Pediatric Division is excited about the partnership not only for integration, but also growth. CHOA will be opening a new Pediatric Imaging Center this November that our faculty will staff.

For more information on these developments, please contact Dr. Stephen Simoneaux, Pediatric Division Director.

Children’s Healthcare of Atlanta partners with Emory to create The Pediatric Center.
Awards & Recognition

Distinguished Service Award
Deborah Baumgarten, MD
Professor
Radiology and Imaging Sciences

Deb Baumgarten has been awarded the Distinguished Service Award by the American Board of Radiology (ABR). She is being acknowledged and shown appreciation for her ongoing exceptional service in fulfilling the ABR mission.

Baumgarten was also highlighted in the ABR newsletter for her volunteer work. She has volunteered for the ABR since 2005. To read more click here.

House Staff Organization
Mike Kassin, MD, PGY 2
Radiology and Imaging Sciences

Mike Kassin, MD, PGY 2, was selected as President-Elect for the House Staff Organization (HSO). Kassin will act as President-Elect this year and serve as President next year. The organization represents all residents and fellows in graduate medical education training programs at Emory University School of Medicine and Affiliated Hospitals. The Organization is available to seek resolutions to issues that cannot be resolved within the training program, and to present and advocate for Housestaff concerns.

Merrill’s Award Recipients
The Merrill’s Committee would like to acknowledge the June, July and August winners of the Merrill’s Award.

June

July

August

Clinical Molecular Imaging and Probe Development Study Section
Hui Mao, PhD
Professor
Radiology and Imaging Sciences

Dr. Hui Mao accepted the invitation to serve as a member of the Clinical Molecular Imaging and Probe Development Study Section, Center for Scientific Review.

Members are selected on the basis of their demonstrated competence and achievement in their scientific discipline as evidenced by the quality of research accomplishments, publications in scientific journals, and other significant scientific activities, achievements and honors.

Caught in the Act
During the months of July and August, a total of four accounts of service excellence were submitted and two individuals were selected for recognition by their peers and leaders.

Valerie Frederick
Nuclear Medicine Technologist

Two nurses from the PPCA at Emory University Hospital witnessed Valerie Frederick, Nuclear Medicine Technologist, deliver service excellence. Frederick stepped outside of her familiar territory in order to help her colleagues in the PPCA (they were experiencing an extreme shortage of nurses) to ensure a great experience for our patients and their families that day. We wish to thank Frederick for being an actively engaged role model of service excellence by applying many of the Service Excellence Standards, such as courtesy, care delivery, and efficiency. To read more click here.

David Lascau
Interventional Radiology Technologist

David Lascau’s evening shift colleagues wrote to Lascau’s supervisor to recognize Lascau for his exceptional display of teamwork, noting that once his task is completed, he will immediately check with other members of the team to see if they need help. Thank you, Lascau, for anticipating the needs of others and delivering service excellence to patients and colleagues through courtesy, care delivery, and efficiency. To read more click here.
The Division of Nuclear Medicine and Molecular Imaging is proud to introduce “Nuclear Medicine Corner”. Since the Division supports a variety of research, clinical and group activities, this forum will highlight those projects and activities. In this edition, Nuclear Medicine will present ongoing research by their trainees, faculty and staff. Please click here to read the Nuclear Medicine Corner.

Publications


In the spirit of Service Excellence Standard #1 – Safety, our Department implemented a more streamlined process to ensure that all safety related incidents are reviewed daily and that our response to such incidents is timely and appropriate.

Several staff members from across the Department agreed to serve as STARS Incident Response Coordinators. STARS is a risk management information system that is used to track safety events, patient complaints, and concerns. The all-star team (pictured below) receives an average of 38 incident reports each month. For incidents that require follow up or investigation, a STARS team member coordinates the process to ensure a timely resolution.

Since the new coordinated process was launched in December 2012, the proportion of reported incidents that are marked as “reviewed by a manager” increased from approximately 30 percent to more than 55 percent, and the turnaround time for incident resolution has improved greatly. Two of the team members, Trecia Wertz and Bobbie Burrow, also represent Radiology in the Emory Healthcare Safety Club, which meets weekly to review the highest priority STARS incidents. Our primary safety goal is to reduce overall incident occurrence. We will work toward that goal by carefully tracking the incidents, identifying key trends, and improving the process accordingly.

If you have questions about when and how to report an incident in STARS, please contact your supervisor or manager or feel free to contact any member of the STARS team.

**Publications (cont’d)**


Growing Our Talent
Radiology Leadership Academy (RLA)

The goal of the RLA is to develop highly engaged leaders who will offer innovative guidance for our department, the institution, and the community. Now in its fifth year, the RLA offers 12 fellows the opportunity to experience a unique curriculum that is designed to enhance professional development by enriching leadership and management skills and broadening awareness of Emory Radiology’s multifaceted role in the institution and greater community of academic health centers nationally.

We are proud to announce the RLA Class of 2014:

Karen Bell-Moore - Supervisor of Interventional Radiology at EUH
Dexter Bostic – Imaging Workflow Specialist
David Brandon - Assistant Professor (Nuclear Medicine)
Katy Day - Imaging Workflow Administrator
Brenda Hall - Supervisor of Ultrasound at EUHM
Travis Henry - Assistant Professor (Cardiothoracic Imaging)
Christopher Ho - Assistant Professor (Breast Imaging)
Eric Jablonowski - Director of Media and Communications
Hilary Karp - Physician Assistant
Lucienne McKinney - Supervisor of Cardiac Imaging and Biomedical Imaging Laboratory
Jonathon Nye - Assistant Professor (Physics and Computing)
Amit Patel - Business Analyst II

Striving for Excellence
Providing Excellence

In today’s economic climate, there are many people who can’t afford health care, and those who can are evaluating their options based on cost, access, and quality of services. Emory has made a commitment that all patients will receive the same high-level of care that is evident by our top 10 rankings for EUH/EUOSH and EUHM from the University Health/System Consortium (UHC).

The Winship Diagnostic Radiology staff, led by Veena Rajaveen, shows this commitment on a daily basis and has received much recognition for it. Rajaveen was the June recipient of the Merrill’s Award for displaying exceptional image quality of bilateral knees. The Merrill’s Award empowers and inspires diagnostic technologists to seek maximum levels of image quality through positive reinforcement. Winship Diagnostic Radiology staff also exemplifies quality in teaching our future generations of technologists. The Emory University Medical Imaging program students really enjoy their rotations in this section and express gratitude to each member of the staff. The team has been awarded the Clinical Site of the Year in 2009, 2011, 2012, and recently in 2013. Technologist, Eric Edmondson, another Winship Diagnostic staff member was awarded Technologist of the Year in 2011 and 2013. This group is all about being the best they can possibly be for the each other, our patients, students, and the department. They are a highly motivated group of self-starters and really enjoy working in the field of Radiology. In fact, all five full-time staff members have over 100 years of combined service to Emory Radiology. Winship Diagnostic Radiology staff:

Veena Rajaveen
Sheila Reynolds
Donna Dalton
Christine Lemon

Adriene Kershaw
Michelle Murdock
Eric Edmondson

Randy Bethea
Asst. Director, Imaging Services
Medical Imaging Program
Communication Techniques Decrease Errors

Did you know that healthcare is as hazardous as bungee jumping and more hazardous than driving or flying? An estimated 44,000 - 98,000 patients die each year due to medical errors. Of those errors, most are due to errors in communication.

Emory’s Medical Imaging students will join over 400 students in the School of Medicine and School of Nursing to attend the Inter-professional Training event. The students will learn communication techniques such as SBAR and Check-back. These techniques will allow students to convey clear, brief and timely messages that are proven to decrease medical errors when communicating with staff and referring physicians about patient care.

SBAR
• Situation – What is going on with the patient?
• Background – What is the clinical background or context?
• Assessment – What do you think the problem is?
• Recommendation – What would I do to correct it?

CHECK-BACK
• Sender initiates the message
• Receiver accepts the message and provides feedback confirmation
• Sender verifies that the message was received
• Receiver confirms that the message received is the same as the intended message sent

The inter-professional team training planners are recruiting physician and technologist facilitators for this important event. If you are interested in being a facilitator, please join us on Monday, October 7 from 8 am-12 pm. You do not need to have any experience with these techniques. For additional information please contact Kim Greenberg at kgreen2@emory.edu or Barbara Peck at bpeck@emory.edu.

New Faculty

Tarek Hanna, MD
Assistant Professor-Emergency Radiology
Dr. Terek Hanna joins Emory Faculty after working with Virtual Radiology Professionals and opening his own practice: Hanna Radiology Associates in Atlanta, GA.

Prior to Emory, Hanna completed his radiology residency and MSK fellowship at Emory University SOM. During his fellowship and residency he contributed to several posters, publications and presentations. His most recent poster is titled, “Radiology After Dark: Overnight Attending Level Radiology Coverage (OALC) in US Radiology residency Programs and the Effect on Resident Education.”

Hanna graduated with a B.S in Economics and Biology at Duke University.

Raymond Higginbotham, MD
Assistant Professor-Community
Prior to completing his neuroradiology fellowship at Emory University, Dr. Raymond Higginbotham completed his radiology residency at the University of Tennessee SOM. During his residency he conducted a presentation on genitourinary radiology case conference - congenital anomalies. He recently did an educational review for Lumbar Spine Surgery.

Higginbotham’s area of focus is in resident and fellow education. He will be giving a talk to Physical Therapy students in November on the basics of neuroimaging.

Bruno Soares, MD
Assistant Professor-Neuroradiology
Dr. Soares joins the Emory Faculty after completing a two-year fellowship in Neuroradiology and a one-year fellowship in Pediatric Radiology at the University of California, San Francisco (UCSF). He also completed a fellowship in PET/CT at the Dana-Farber Cancer Institute.

His recent accomplishments include the Outstanding Clinical Fellow / Instructor Teaching Award from the UCSF Department of Radiology, and the Research Fellow Grant from the Society for Pediatric Radiology.

Soares current research interests are in brain malformations, pediatric epilepsy and neonatal brain imaging.
Leslee Gomillion  
Interventional Technologist  
Leslee Gomillion received her BMSc in Medical Imaging from Emory University. She will be working with Interventional Radiology as an Interventional Technologist. Gomillion is a member of Atlanta Society of Radiologic Technologists.

Angie Graves  
Neuroradiology Fellowship  
Angie Graves joins us from Indiana University, where she supported the curricula for seven years. She will use her skills to support the Neuroradiology Fellowship program. Graves received her BS in Elementary Education.

Ranitta McDowell  
Program Coordinator  
Ranitta McDowell joins the Education Division as Program Coordinator. She will support and coordinate the Nuclear Medicine and Nuclear Radiology programs. McDowell has previous experience as a Residency Program Coordinator at Summa Health System. Recently, she completed Culinary and Event Planning School.

Radiology Fellows

Emergency Radiology

Alvin Galuten, MD  
Medical School: Emory University SOM  
Residency: Columbia University

Updates from Imaging Applications Support (IAS)

PowerScribe 360

Coming late September 2013: PowerScribe 360 introduces a number of speech enhancements that save time and improve the end-user reporting experience.

Who:
This affects Radiology, Cardiology and Vascular clinicians.

Features:
• Speech recognition platform – Dragon Medical 10
• Up to 99 percent accurate out of the box
• Language models with regional accent support
• Speech recognition preferences – text streaming and auto-formatting, etc.

Need to Know:
All end users will need to train new voice files to use the new platform at go-live – this allows for improved enhancements with Dragon Medical 10. The system will be inoperable until voice training occurs.

More details to come

RadNet Reason for Exam

In RadNet the “Reason for Exam List” and “Reason for Exam” fields are now combined and displayed in PowerScribe in the “Reason for Exam” field.

Click here and subscribe to the Rad Report! Look for the Rad Report to be in November 2013.

If you have an idea for a story or would like to submit an article, you can become involved with the Rad Report by sending an e-mail to Camille Dingle, Communications Specialist at cdingle@emory.edu. When submitting content for consideration, please copy your supervisor, manager or director. Also, if you would like additional information regarding communications in the Department of Radiology and Imaging Sciences please visit the Media Services and Communications webpage on the radiology intranet.