

April, 2008

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What is CSI?

The Center for Systems Imaging (CSI) is an integrated

organizational structure designed to provide synergy for various aspects of imaging research and make imaging resources easily available to the greater university community. Imaging is multi-disciplinary and becoming increasingly important to multiple fields of investigation.

The CSI encompasses complementary resources based at specialized imaging facilities along the Clifton Road corridor. Locations include: **Emory University** Hospital, the Wesley Woods campus (opening summer 2008), Yerkes National Primate Research Center, the Winship Cancer Institute, the Whitehead Building, and the new Emory Psychology building.

Synergistic Exploration

On the evening of April 2, the Emory Center for Systems Imaging (CSI) celebrated its launch with spectacular presentations from premier MR researcher, Mark Henkelman, PhD and molecular imaging pioneer, Sanjiv Sam Gambhir, MD, PhD.

During the opening remarks David S. Stephens, MD. Vice President for Research in the Robert W.Woodruff Health Sciences Center, described the organizational structure of CSI as masterfully designed to emphasize collaboration. Anticipation of promising relationships and discovery was shared by Santa J. Ono, PhD, Vice Provost for Academic Initiatives and Deputy to the Provost.

Preceding the feature presentations, Carolyn C. Meltzer, MD, Chair of Radiology and CSI Strategic Director, gave an overview of the vision for the future of CSI. She explained that CSI is designed to unite research efforts throughout the university community. With imaging as a foundation for exploration, multi-disciplinary relationships

will be encouraged to create synergies resulting in medical advancements.

Each of the honored guests shared lessons learned through their experience as researchers.

Dr. Henkelman began by consulting his crystal ball, assuring everyone that the future of science could only be found through persistent exploration of infinite possibilities. Next, he pulled from his experience as a Senior Scientist at the Sunnybrook Health Sciences Centre, at the University of Toronto, to unveil the importance of the relationship of the center and the university. He pointed out that the university is a renewable resource, providing a constant supply of students, residents and fellows eager to contribute and stimulate new ideas. The power of combining the knowledge of experienced scientists with raw ambition fosters an innovative environment.

Dr. Gambhir traveled to Emory from Stanford University where he is the Director of the Molecular Imaging Program and a member of the Stanford Comprehensive Cancer Center. He walked through a few of the growing pains of forming a center, highlighting the importance of communication. First, a structure to communicate across disciplines

must be in place. Second.



The Center for Systems Imaging (CSI) Launch is celebrated by leadership across the Emory Campus, as they initiate cross-disciplinary research.





The final step is to slowly learn to speak each other's



Following the CSI Launch event, guests celebrated the promise of integrated research at the reception in the SOM lobby.

language. To this point, he emphasized the importance of creating computerized models that can bridge the gaps of vocabulary differences.

The CSI initiative will be led by Scientific Director Xiaoping Hu, PhD, Professor and Georgia **Research Alliance Endowed** Eminent Scholar in Imaging. He will work closely with Co-Directors; Mark Goodman, PhD, Professor and Endowed Chair in Imaging Science, and John Votaw, PhD, Director of Physics and Computing. Together they will be guided by the mission of excellence as they implement the organizational structure that will ensure the success of this synergistic enterprise.

With a clear mission, sound advice and strong leadership, the Emory Center for Systems Imaging has gathered the tools to build an important institutional resource to keep Emory at the cutting-edge and continue to advance the possibilities.

> - Monica Salama Communications Specialist

EMORY HEALTHCARE

Letter from the Chair

Dear Colleagues,

The department faculty leadership, with input from many, has worked hard over the past year to develop a fiveyear strategic plan for our path forward. This roadmap focuses on five target areas and aligns with our strengths, aspirations and the strategic initiatives of the Emory University School of Medicine and Emory Healthcare. In developing this plan, we were constantly guided by the department's mission statement:

The Emory Department of Radiology serves the community through advanced innovation, translational research and clinical application of imaging sciences. The department is committed to excellence in scholarship and to the training of the next generation of radiologists, technologists and imaging scientists. The department's goal is to provide the highest quality patient care with predictive, diagnostic and therapeutic imaging-based approaches. I would like to take this opportunity to summarize the department's strategic plan as we get ready to kick-off its implementation:

Goal #1 - "To Enhance Faculty Recruitment and Retention", is synergistic with the Emory University strategic theme of Strengthening Faculty Distinction and emphasizes our awareness that it's the people that make organizations great. We will focus on recruitment of top-ranked faculty, succession planning and on fostering a culture of equity, transparency and accountability that supports faculty development, satisfaction and retention.

Goal #2 - "To Become a National Leader in Radiology Practice Quality Improvement", requires a commitment on the part of all department members and the support of infrastructure changes underway. Quality is the number #1 strategic focus of Emory Healthcare and we strive for our department to be a model for advances in this area.

Goal #3 - "To Achieve Top-20 NIH Ranking", as one metric of growth of our research programs is an achievement in clear sight. For FY07, we are ranked 28th nationally among radiology departments in NIH funding (up from 31st last year) and our funding is climbing rapidly at a time of flat federal research budgets. Continued investments in our research infrastructure, recruitment and fostering interdisciplinary translational programs will further enhance opportunities.

Goal #4 - "To Enhance our Relationship with Referring Physicians", reflects a strength that we can constantly improve upon by addressing ways to optimize patient service and

communication with clinicians, including improved use of information systems.



Goal #5 - "To Establish a Sustainable Development and Fundraising Program", is important to support goals I – 4 and for the growth of our research and educational programs. We are working to create new giving mechanisms such as the Imaging Innovation Fund and the Adopt-a-Resident Program.

More to come on our strategic plan as it unfolds. We will need everyone's help to achieve these goals and to continue on our shared journey toward becoming a true destination department.

Best to all,

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

AWARDS & RECOGNITION

Ioannis Sechopoulos, PhD Assistant Professor of Radiology

Farrington Daniels Award



The American Association of Physicists in Medicine (AAPM) has selected Dr. Sechopoulos as the recipient of the Farrington Daniels Award

for one of the best papers on radiation dosimetry. The featured paper was published by Medical Physics in 2007: "Computation of the glandular radiation dose in digital tomosynthesis of the breast".

Student Bee Medical Imaging Program

Stuart Johnson was declared the winner of National Student Bee hosted by The Atlanta Society's Student & Radiographer's Seminar & Educators. He competed against 203 other students and received a cash award, t-shirt and an autographed set of Merrill's Positioning Atlases for his accomplishment. In addition, three other junior Medical Imaging students, Rebekah Finck, Lori Ciani and Steve Beauchamp, represented Emory in the Student Bee. Rebekah Finck made it to the 5th round



and finished in the top 20, competing against contestants from 46 programs country-wide. This year the event was held on March 2, 2008 at the Crowne Plaza Atlanta Ravinia. Program directors from across the country submitted the questions to be used in the Student Bee and top radiologic technology authors assisted in organizing the questions to make them representative



Stuart Johnson's radiology knowlege earned him first place at the 2007 Student Bee.

of the certifying exam. The questions varied in topic from anatomy, procedures, radiographic technique, equipment, patient care, radiologic physics and biology. After each round, the questions grew progressively more difficult with 445 questions used to determine the winner. Congratulations!

EMORY HEALTHCARE

ENGAGE IN EDUCATION

Represent Emory at an International Level

Emory University has the opportunity to be involved in the lives of students from around the world at the upcoming Intel International Science and Engineering Fair (ISEF). This year the conference will be hosted here in Atlanta, May 11-16, presenting the perfect opportunity for faculty and staff to volunteer and support the scientific inspiration of over 1,500 of the world's brightest young scientists and inventors.

In particular, the ISEF is in need of Grand Award Judges. To qualify as a Grand Award Judge, you must have a PhD, MD, or a bachelors or masters degree plus six years of experience in an appropriate field. ISEF has reported that, "one of the most valuable experiences for the student finalists at the Intel ISEF is the opportunity to discuss their research with judges who are established members of the scientific community." To learn more about judging or to apply to be a Grand Award Judge, visit: http://www.intelisef2008. org/judging.html. Over 1,200 general volunteers are also needed to support the many duties of this week-long international event. All volunteers should register online before May 1. To learn more about volunteering opportunities, visit: http:// www.intelisef2008.org/volunteering.html.

Resident Match Completed

Each year the race to become an Emory Radiology Resident becomes more competitive. This year 689 candidates applied, 116 were interviewed and ultimately the 14 people listed below will be come Emory Radiology Residents beginning in July 2009.

2008 was a record year for the National Resident Matching Program (NRMP), receiving 28, 737 applicants, 15, 242 of whom were U.S. medical Mullins, Vice Chair school seniors. The NRMP also reported that "more than 94 percent of seniors who applied for residencies this year were paired with a program of their group and in the

choice—the highest percentage in more than three decades." They go on to explain, "Conducted annually by the NRMP, the Match uses a computer algorithm, designed to produce favorable results for students, that aligns the preferences of applicants with the preferences of residency programs in order to fill the thousands of training positions available at U.S. teaching hospitals."

In closing, Dr. Mark of Education, shares "We were really happy with our Match results and expect that this Radiology Resident class will be a wonderful great tradition of very smart, well-trained, team-oriented Emory Radiology Residents. Again this year, we were fortunate to have so many extremely impressive applicants for our program. We would like to thank everyone involved with making this process an incredible success again this year. Ten of our future Emory Radiology Residents will be here in July as interns in the Transitional Program and you might be working with them very soon! Please welcome them to our family."

For the complete NRMP Match article visit: http:// www.aamc.org/newsroom/ pressrel/2008/080320.htm

As these bright young inventors gather here in Atlanta, the 9th to 12th grade students will be inspired by Nobel Laureates,



The Exhibit Floor of the 2007 Intel International Science and Engineering Fair, hosted in Albuquerque, NM, displayed the independent research of 1,512 finalists.

academicians and leading scientists and researchers from our city of Atlanta, the State of Georgia and from around the world. Students attending this fair will be representing at least 45 countries and all 50 states and will be competing for over \$4 million in scholarships and awards at this international culmination. Their projects will be of the highest quality, having won at their own regional fair.

This year's event will mark 57 years since the first National Science Fair was held in Philadelphia. In 1950, boys and girls were judged separately with a total of 30 high school students competing for prizes totaling \$1000. Since the first National Science Fair, the event has evolved to include international competitors (1959). The event continued its growth with the addition of the Intel Corporation Sponsorship in 1996. Intel has committed millions of dollars to develop and promote the program and increase the number of awards

Today it takes more than 1,200 staff and volunteers to conduct the world-class event that honors the innovative efforts of high school students world-wide. This is the perfect opportunity for each staff & faculty member to consider contributing time to support the future of scientific exploration.

2009 Ist Year Emory Radiology Residents Nnenna Aguocha

~ Emory University School of Medicine
Todd Cramer
~ Emory University School of Medicine Ankur Doshi
 Mount Sinai School of Medicine of New York University
Meryle Eklund ~ Tulane University School of Medicine
Nicholas Henson ~ Mercer University School of Medicine
Lillian Ivansco ~ Emory University School of Medicine
Santhi Kollengode Venkitachalapathy ~ Calicut Medical College
Andrew Lemmon ~ University of South Florida College of Medicine
Daniel Russell ~ Medical College of Georgia SOM
Ayesha Sarpong ~ Duke University School of Medicine
Riley Smyth ~ Emory University School of Medicine
Erica Traina ~ University of South Florida College of Medicine
Grant Webber ~ University of South Florida College of Medicine
Bryan Yi ~ New York Medical College

- Monica Salama, Communications Specialist

EMORY HEALTHCARE

New Grants

Detection of Left Ventricular Dyssynchrony by Cross-Correlation Analysis

Principal Investigator: John Oshinski, PhD *Co-Investigators:* Angel Leon, MD John Merlino, MD

John Carew, PhD Brandon Fornwalt

Funding Organization: National Institutes of Health (R21)

Significance: In thirty percent of patients with severe, drug-refractory heart failure, regional timing of myocardial contraction and relaxation is *dyssynchronous*. This mechanical dyssynchrony leads to adverse ventricular remodelling, increased mitral regurgitation, and reduced ejection fraction. Despite Cardiac resynchronization therapy (CRT) showing benefits in many multi-center clinical trials, 30% of patients selected for CRT show no improvement by clinical or echocardiographic endpoints. This poor response rate may in part be explained by limitations of current methods to determine the presence and severity of dyssynchrony.

To overcome the limitations of existing dyssynchrony parameters, we have developed a new mathematical method to calculate a temporal

CHECK IT OUT

delay between two myocardial tissue velocity profiles acquired with tissue Doppler imaging (TDI). Our method utilizes a function to quantify either systolic, diastolic, or whole-cycle delays using TDI data collected throughout the cardiac cycle.

The objectives of this study are to evaluate the ability of our method to: 1) quantify mechanical dyssynchrony in the heart, and 2) predict response to CRT. Preliminary data in a group of young, healthy, normal subjects (negative controls) and known responders to CRT (positive controls) indicate excellent sensitivity and specificity of the methodology. The central hypothesis of this study is that our method of determining dyssynchrony delays is more sensitive and specific in selecting patients who respond to CRT compared to currently utilized methods.

Chamsuddin A, Nazzal L, Kang B, Best I, Peters G, Panah S, Martin L, Lewis C, Zeinati C, Ho JW, Venbrux AC. Catheter-directed Thrombolysis with the Endowave System in the Treatment of Acute Massive Pulmonary Embolism: A Retrospective Multicenter Case Series. J Vascular Interventional Radiology 2008; 9: 372-376. http://www.jvir.org/article/S1051-0443(07)01376-0/fulltext

Sechopoulos I, Suryanarayanan S, Vedantham S, D'Orsi CJ, Karellas A. Monte Carlo and Phantom Study of the Radiation Dose to the Body from Dedicated CT of the Breast Radiology 2008; 10.1148/radiol.2471071080.

Continued Recognition

The study **Stereoscopic Digital Mammography** has received national coverage since the RSNA press conference last November. At the conclusion of the study last December, the Breast Imaging Center (BIC) had evaluated of nearly 1,500 women. The study is considered a success with the final results proving to reduce false-positives by 49 percent. Today the coverage continues, as the public anticipates the next stage to move this advancement to clinical use. View the most recent television coverage at: http://abclocal.go.com/kabc/media?id=6046752



The research "Radiation Dose to Organs and Tissues from Mammography: Monte Carlo and Phantom Study" was originally published in *Radiology* and also featured on HeathNewsDigest.com, continued to receive recognition in the January issue of Radiology Today. The article features an interview with researchers Ioannis Sechopoulos, PhD, Assistant Professor of Radiology and Andrew Karellas, PhD, a former Emory professor.

Department Scientific Review Committee

- **Step 1** Create a time line that allows the team 7 business days to review your grant.
 - **Step 2** Submit, via e-mail, your grant to Dr. John Votaw (John.Votaw@Emory.edu), who will distribute the grant to appropriate reviewers.
 - Step 3 Take the suggestions from the Grant Review Board and make the appropriate changes. (Be sure to give yourself sufficient time to implement the changes!)
 - **Step 4** Submit your grant.

Increase the chances of being awarded funds by taking the time to have your submission reviewed by the Grant Review Board.





STRIVING FOR EXCELLENCE

Elevating Organizational, Group and Individual Performance

In the healthcare arena, we are frequently tasked to accomplish more. At the same time, we are asked to improve quality and customer service. These competing expectations heighten tension, but we have the ability to reduce stress and increase efficiency through optimal performance. Applied consistently at all levels, the following elements aid in enhancing performance:

- **Inspire** a shared vision: Effective organizations work well, in large part, because their employees are striving towards the same overall objective(s). A vision (message, mission, or story) must be consistently communicated and understood. Above all, a vision should be moral; promoting the welfare of customers, employees, and communities. Our vision consists of providing high-level patient care and research accompanied by the best possible customer service.

- **Foster** trust and collaboration: Companies focus on physical capital (machines, supplies, and buildings) and ensure there is qualified human capital (employees), but they often neglect social capital (a term coined by Robert D. Putnam). Social capital, the building and maintenance of strong relationships, leads to sustainable results! The goodwill that comes with this capital allows individuals and companies to build upon successes and recover from mistakes. We build social capital through open communication and collaborative efforts. Relationships are further strengthened by showing genuine interest in others and taking every available opportunity to encourage and authentically praise one another.

- **Openness** to new ideas or methods: Valuable insight comes from participants in each step of the work process. The people who do the actual work are the most knowledgeable regarding their work areas. Additionally, engaged participants are more likely to embrace change and motivate peers to do the same. Oftentimes, an attempt is made to institute change without sufficient input. Another common oversight is to seek input without developing a clear picture of how to use the information. In either case, trust and progress are jeopardized. Equally important, employees have a duty to communicate whenever a process is flawed or when there is an opportunity to improve.

- **Model** the way:All employees affect others through words and deeds. When we voice our values to those around us, it is critical that our actions match what we say. Those who don't "walk the talk" are less credible and their ability to motivate others becomes severely compromised.

The preceding points include some of the key elements in James MacGregor Burns's theory of Transformational Leadership. Anyone – from student to CEO - can practice the transformational method. Applied sincerely and for honorable purposes, Transformational



Leadership engages others, forges strong connections and elevates motivation and morality to ultimately achieve desired outcomes.

> - Charles Powell The Emory Clinic Practice Administrator

TECHNOLOGIES MOVING FORWARD

RIS and PACS Project Update

IDXRad will soon be replaced by RadNet, as the RIS implementation project steadily progresses. The exam catalog design and build phases, a major cornerstone of the project, will be completed in the next two weeks. This paves the way for the testing process to begin.

During the testing phase, a representative team of radiology faculty and staff will participate in validating the design and functionality of the RadNet solution. Concurrently, the Operational Redesign team will continue collaborating with the learning consultants on designing the RadNet training program. The multitude of concerted efforts is expected to culminate to a RadNet golive date in late July 2008.

Being an early adopter of RIS, Emory University Hospital originally implemented the Digital Equipment Corporation's RIS in 1986, thus becoming the second customer to implement DECrad. The implementation of RadNet will continue a long RIS tradition at Emory.

The RadNet project objectives focus on propelling Imaging Informatics forward by:

- creating a requisition-less RIS-driven workflow
- ensuring data integrity
 expanding beyond the
- enterprise - adopting process standardization and
- standardization and reducing variance - employing real-time
- metrics to optimize operations
- ensuring accountability

Adherence to the aforementioned guiding principles will ensure a successful implementation of RadNet. This achievement will lay the foundation for one of Emory's most significant imaging informatics infrastructure initiatives -

acquiring a new PACS. In March, the Emory Woodruff Health Sciences Center and Emory Healthcare boards gave their approval to move forward with the GE PACS. Subsequently, a joint Information Services/ Radiology committee has been working with GE on contract negotiations. Significant progress has been made and a final contract is anticipated between late April and early May. In conjunction with contract negotiations, a preliminary project team from Emory Healthcare and GE has been working on the PACS implementation plan.

- Mo Salama Assistant Director, Imaging Informatics



GETTING TO KNOW YOU

As the Radiology Department grows within the Emory Healthcare system, knowing who your team members are and what they do becomes increasingly important. Each month there will be a feature to highlight a person or group within the department to strengthen our understanding of how we work together and to help us to learn more about each other.

Front Desk Support Teams

On a daily basis, front desk specialists are the first people in our department who impact the patients' experience and leave a lasting impression on them. It is extremely important for them to provide the patients with a warm welcome when entering the Radiology waiting rooms, which are located throughout the Emory Healthcare system.

Radiology

In addition to greeting patients with a smiling face and energetic attitude, they handle a variety of other tasks, including checking-in the patients, guiding them to the correct department or doctor and informing the patients of possible delays.

Some of the more challenging moments are dealing with patient delays due to lack of proper legal documentation for procedures. Without the proper communication tactics, it can become difficult to keep the patient informed of any important change in information. In addition to working with the patients, front desk specialists communicate with the families of patients on a regular basis. It is often most rewarding for front desk specialists to interact with the patients and keep them satisfied. No matter the circumstance, it is imperative that they remain calm and polite.

Due to HIPPA Regulations, it becomes essential that the front desk specialist know how to work with patients, who may have questions that cannot be answered by them directly. In this situation, the patient is often referred to a doctor, nurse practitioner or other resource to satisfy their concerns.

There are various titles that you may see associated with these front desk specialists, such as Patient Accounts Representative or Patient Services Associate. Regardless of the specific title, each person contributes to the radiology department by providing patients with helpful customer service that ensures a pleasant experience.

> - Alaina Shapiro Communications Coordinator

EMORY HEALTHCARE

Radiology Reception

GET INVOLVED



Visit www.radiology.emory.edu/events-and-lectures for up-to-date event information.



New Faces & Appointments



Anthony Butts, RT (R) Radiology Technologist III

Anthony is located at the Emory University Hospital as a Radiology Technologist in Interventional Radiology. He was working at Piedmont Hospital for eight years and Northside Hospital for six years before joining Emory. Anthony was involved with the Airforce for six years and resided in several areas of California before moving to Georgia.



Rachel Vaught, RT (R) Registry Radiology Technologist

Rachel Vaught is new to Emory, with her area of focus in EUH Diagnostic Radiology. Prior to Emory, she worked at Athens Regional Medical Center, Rockdale Medical Center and Eagles Landing Family Practice all as a Diagnostic Radiographer. Rachel attended Griffin Technical College where she received her associate's degree in Radiologic Technology.



Michael Cromwell, RT (R) Interventional Technologist

Michael Cromwell has joined the Emory Radiology Department as an Interventional Technologist after gaining previous work experience at Dekalb Medical. He is also involved with the Radiology Community as a member of the Atlanta Radiology Society. Outside of work, Michael is interested in Real Estate.



Glenda Williams Radiology Technologist Assistant

Glenda Williams assists with the patient care in the Interventional Radiology at EUH. She has eight years of previous experience working at Northside Hospital as an out patient surgery support technologist. When Glenda is not working hard at Emory, she enjoys going to the gym, cooking, reading and meeting new people.



Margaret Duello Research Project Coordinator

Margaret Duello has been working at Emory for over four years in various departments. She has worked as an office manager in the private sector, an administrative assistant in the Department of Medicine and also in the Division of Geriatrics. In 1997, she received an Outstanding Leader Award from the Northwest Georgia Girl Scout Council.



Hajji Golightly, CT (R) Technologist Aide

Hajji Golightly is working in the Emory University Hospital focusing on healthcare through diagnostic imaging. With four years of previous experience, he is knowledgeable in the radiology profession. Hajji is a member of American Society of Radiologic Technologists and American Registry of Radiologic Technologists.



Timothy Jones Radiology Assistant

Timothy Jones began his career at Emory as a member of "Project Search," which allows students to shadow at various locations in the hospital and train in specific areas. He is the first student from this program to be hired in the radiology department. Timothy will be assisting the EUH CT team by escorting patients to different locations and picking-up medical supplies.



Lindsey Mitchell, RT (R) Registry Radiology Technologist

Lindsey Mitchell joins Emory with two and a half years of experience and supports the night services of the EUH Radiography X-ray area. In May 2006, she graduated from Southern Union State Community College (SUSCC) of Opelika, AL with an Associates Degree in Applied Science Radiography. Lindsey is currently in school online at SUSCC to continue her education in CT and MR Imaging.

Radiology Grand Rounds

April 2008

Wednesdays 7:30 - 8:15 a.m. Emory University Hospital Auditorium

- 4/2/08 Mark Henkelman, PhD University of Toronto Imaging for Mouse Phenotyping
- 4/9/08 H. Page McAdams, MD Duke Radiology Imaging of Lung Transplantation
- 4/16/08 ~ No Lecture ~ Due to ARRS Annual Meeting
- 4/23/08 Rich Mendola, PhD Emory University - IT Advancing the State of Information Technology for Emory's Research Community
- 4/30/08 Brian C. Bowen, MD, PhD, FACR University of Miami Topic TBA



EMORY

UNIVERSITY

Arrive at 7 am for a Complimentary Breakfast