Message from the Chairman

It’s finally spring as we embark on many new exciting opportunities in the department of Radiology. On March 21st, under the direction of Dr. Schoepf, MUSC Radiology performed the first cardiac CT in the US using the pioneering FORCE CT scanner. This new technology once again places MUSC Radiology at the forefront of innovation in the United States together with the Mayo clinic in Rochester, MN. The FORCE CT which operates under IRB approval, is not currently FDA cleared, however we anticipate approval in the 2nd quarter of 2014.

Dr. Joseph Helpern and his research colleagues hosted the 2nd Annual Center for Bioengineering Open House on March 12th. Lectures were presented by Dr. Helpern and Dr. Brent Musell of the College of Charleston. The event included a vendor showcase and tours.

The Sanctuary of Endovascular Therapy (S.E.T.) held its annual meeting in February at the Sanctuary Hotel on Kiawah Island. Led by Drs. Bayne Selby and Marcelo Guimaraes, the event hosted radiologists, vascular surgeons, cardiologists, technologists and nurses from across the United States.

Congratulations to eleven faculty members as they were named among “Best Doctors in America 2014”. This is a singular honor recognizing only the top five percent of US doctors. Other important WINS for Radiology include Dr. Imran Chaudry’s promotion to Associate Professor for Radiology, Dr. Guimaraes being elected to a Fellow in SIR and Dr. Curry receiving a Lifetime Service Award from ABR. Dr. Irshad also received the Volunteer Service Award from ABR and Dr. Schoepf was awarded the “Most Cited Paper Award” from European Radiology. Finally please welcome the new Radiology Residents Class of 2015-2019. They are featured on page 6 with their photos and education information.

Philip Costello, M.D., F.A.C.R.
Professor and Chairman
Department of Radiology & Radiological Science
On March 21st, MUSC Radiology performed the first cardiac CT in the United States using Siemens pioneering 3rd generation dual force FORCE CT scanner. As one of only two sites in the US possessing this technology (the Mayo Clinic in Rochester, MN being the other), MUSC continues to be at the forefront of advancement in CT imaging. This high-end scanner allows for scan acquisitions times measured in milliseconds with considerably lower radiation doses (as much as 50% dose savings compared to standard CT).

Under the direction of internationally renowned cardiac imager, Dr. U. Joseph Schoepf, a 78 year old gentleman with a history of multiple coronary bypass procedures underwent a diagnostic quality ECG gated cardiac CTA with a scan time of less than 300 milliseconds utilizing a contrast dose of only 40cc. The radiation dose in this patient with Body Mass Index of 36 was 1.3mSv, compared to doses from traditional cardiac CTA averaging around 15mSv nationally, a 10 fold reduction in radiation exposure.

This new scanner technology again places MUSC Radiology at the forefront of innovation in the United States. Additional unique applications for the FORCE scanner currently being evaluated include low dose lung cancer screening, virtual colonoscopy and dual energy liver and pancreas protocols. Congratulations to Dr. Schoepf and his team!
3rd Generation Dual Source CT

Patients whose health conditions have traditionally challenged conventional CT techniques - due to arrhythmia, renal insufficiency, age, or illness - have spurred innovations to overcome these obstacles without compromising image quality. At the same time, vendors have shown their commitment to patient comfort and safety by reducing radiation dose, driving the industry forward. The newest CT products offer more than just the latest bells and whistles, but rather aim to fill real voids in clinical care.

Siemens’ next-generation CT scanner includes features that address the needs of the most challenging patients, including those with rapid heartbeat, renal insufficiency, or lung cancer. At 737 mm per second, the SOMATOM Force boasts the fastest acquisition rate on the market, allowing a full chest and abdomen analysis in one breath. The system has captured diagnostic-quality images for patients with heart rates of 90 beats per minute without using beta blockers. A Turbo Flash Mode switches over to a 50 cm field of view while still maintaining a 400 mm acquisition rate. For elderly or ill patients whose kidneys cannot process typical doses of contrast agent, the low-voltage Vectron x-ray tubes permit levels as low as 25 to 35 mL.

A National Cancer Institute study also has shown that low-dose CT can reduce lung cancer mortality rates by 20% compared to standard x-ray procedures. According to the manufacturer, the SOMATOM Force is particularly well suited to this application as Siemens’ Selective Photon Shields optimize the x-ray spectrum to improve air and soft-tissue contrast, reducing radiation dose up to 50% compared to similar CT systems.
Due to several weeks of inclement weather, the 2nd Annual CBI Open House was rescheduled to Wednesday, March 12, 2014. The event was held from 10 a.m. until 4 p.m. in the Bioengineering Building.

Lectures were presented by Brent Munsell, Ph.D., (College of Charleston) “Using Deep Learning to Predict Autism in Infants Prior to 24 Months of Age” and Joseph Helpern, Ph.D. (MUSC) “From Zeugmatography to MRI to the Novel Prize and Beyond”.

The event also included a vendor showcase and tours with equipment demonstrations.
Joseph Helpern, PhD, was recently invited to join the Panel of Experts for the *Academy of Radiology Research & National Institutes of Health* sponsored program entitled: **Uncovering Connections: Imaging Advances in Autism, Traumatic Brain Injury and Alzheimer’s Disease** held in Bethesda, MD.

The purpose of the conference is to create an interdisciplinary forum that can bring together experts in biomedical imaging and neurological diseases to discuss ways and means to optimize our research investments in these fields.

**Grants**

- Ali Tabesh - $25K SCTR (epilepsy)
- Jens Jensen - $250K NIH R21 (stroke)
- Joe Scheopf - Siemens FORCE CT scanner

**Center for Biomedical Imaging FY13 Annual Report**

- First Annual Report.
- Provided Support for 55 research groups with 74 unique research projects funded by an estimated total of 65 federal and foundation grants.
- CBI grants represented $11.5M in funding to MUSC with yielding $2.8M in indirect costs.
- CBI underwrote $359K of “development time” for MUSC researchers.
- Initiated a Ph.D. program in Biomedical Imaging (Dr. Truman Brown).
NEW RESIDENTS

Radiology Residents - Class of 2015-2019

Caroline Marie Cusack  
Creighton University

Allie Franklin  
MUSC

Jessica Freeman  
University of Louisville

Benton Johnson  
MUSC

Michael Knipfing  
Lake Erie College

Thomas McLaren  
E. Tennessee State University

Daku Siewe  
UNC Chapel Hill

Alex Smith  
University of Alabama

Samuel Volin  
Tufts University
Being named a Best Doctor is a singular honor recognizing only the top five percent of US doctors. Only those who earn the consensus support of other expert physicians are included.

Philip Costello, M.D., FACP
Susan Ackerman, M.D.
Nancy Curry, M.D.
Leonie Gordon, M.D.

Marcelo Guimaraes, M.D.
Jeanne Hill, M.D.
J. Bayne Selby, Jr., M.D.
Stephen Schabel, M.D.

Joseph Schoepf, M.D.
Claudio Schonholz, M.D.
Kenneth Spicer, M.D.
CONGRATULATIONS!

Dr. Joseph Schoepf Awarded Most Cited Paper Award
Dr. Schoepf’s paper entitled “Coronary CT angiography: image quality, diagnostic accuracy, and potential for radiation dose reduction using a novel iterative image reconstruction technique-comparison with traditional filtered back projection”, published in European Radiology in 2011, has received 62 citations in 2 years (2012-2013).

Dr. Joseph Schoepf Receives 2013 Editor’s Recognition Award with Distinction for outstanding efforts as a reviewer with RADIOLOGY.

Ibid Irshad, MD
Honored with the “Volunteer Service Award” from the American Board of Radiology.

Dr. Curry receives Lifetime Service Award from ABR

Dr. Nancy Curry received a Lifetime Service Award from the American Board of Radiology. The certificate says, “In acknowledgement and appreciation of ongoing exceptional service in fulfilling the ABR mission, Dr. Nancy Curry is awarded this Lifetime Service Award.”
Dr. Guimaraes Elected Fellow to SIR

Dr. Marcelo Guimaraes was recently elected a Fellow in the Society of Interventional Radiology for his leadership and passion for the specialty. The Fellowship is presently bestowed on less than ten percent of SIR membership. It represents significant achievement and leadership as well as contributions to the Society of Interventional Radiology.

FACULTY PROMOTIONS

Imran Chaudry, M.D.
Promoted to Associate Professor
Held in February 2014 at the Sanctuary Hotel on beautiful Kiawah Island in South Carolina, the Sanctuary of Endovascular Therapy (S.E.T.) annual meeting hosted radiologists, vascular surgeons, cardiologists, technologists and nurses from across the United States. This year’s conference featured the unveiling of a portrait of Dr. Renan Uflacker, who was the Director of Vascular and Interventional Radiology until he passed away in 2011. Jerry Reves, M.D., Distinguished University Professor and dean emeritus of the College of Medicine, spoke about the man and the physician and how fitting it is to honor a colleague who gave so much of himself to MUSC and the world.

The comprehensive program provided clinical and technical information on embolization, SFA, AAA/TAA, CAS, venous access, case presentations and cutting-edge technologies. Endovascular Therapy is one of the fastest developing disciplines in high-end medicine and its innovation continuously sets new standards of care.
IN THE NEWS

AuntMinnie.com Reports Residents Successful Reading CT Triple Rule-out Exams

According to a study presented at ECR 2014 in Vienna by A.J. Lewis, M.D., residents can safely perform triple rule-out CT exams when onsite or on-call subspecialty radiologists aren’t available. Residents missed a few more minor findings on triple rule-outs than they did on other types of CT exams. The study took place over a two-year period at MUSC with approximately 617 ECG-triggered triple rule-out exams performed.

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Dr. Matt Gillott and Dr. Munazza Anis Presents LIRADs Poster at MUSC Research Day

Radiology Publications

First-Arterial-Pass Dual-Energy CT for Assessment of Myocardial Blood Supply: Do We Need Rest, Stress, and Delayed Acquisition? Comparison with SPECT.

Iterative Image Reconstruction Techniques for CT Coronary Artery Calcium Quantification: Comparison with Traditional Filtered Back Projection in Vitro and in Vivo.
Radiology “Pie Throw” Supports March of Dimes

Every day, thousands of babies are born too soon, too small and often very sick. The mission of the March of Dimes is to improve the health of babies by preventing birth defects, premature birth and infant mortality.

The Radiology Department is getting involved and donating to the March of Dimes by holding a “Pie Throw” headed up by our own Janice Petrilla. The first targets for the Pie Throw held on Friday, March 28th were Linus Brown, Maribeth Harrison, David Dechant, Jeff Stieber, Joye Lutz and Brian Croy. The fundraising goal is $150.00.
The Radiology Department Blood Donation contest for 2013-14 began on September 1, 2013. Have you given blood? If so, please be sure to email your name, your division, and the date(s) you donated to Sandra Stringer at stringes@musc.edu. At the end of the year our top three donors will be awarded plaques to commemorate their generosity, as well as some special gifts!

Also, when you give blood, bring along a camera. Get the technician to take a photo of you during the donation process. Send your photo to Tonya Pilkenton at pilkento@musc.edu for possible inclusion in the next newsletter!

Radiology Staff Who Have Donated:

• Tina Cooper (Radiology Research) October 31, February 26

• Tina Rapstine (Radiology Residents) December 31, February 26

• Sandra Stringer (Interventional Radiology) September 17, January 30

• Marion Watson (Radiology Admin.) Sept. 17, Dec. 17, Jan. 26

• Teena Wyatt (Neuro Interventional) October 30
Scientific Formal (Paper) Presentations

Ali Tabesh, PhD
Altered Axonal Connectivity in Medial Temporal Lobe Epilepsy: Association with Disease Severity

Alexander Krazinski
Reduced Radiation Dose and Improved Diagnostic Image Quality at Cardiovascular CT Angiography by Automated, Individualized X-ray Tube Voltage Selection: Intra-individual Comparisons

Felix Meinel, MD
CT Angiography for Aortic Root Measurements in TAVR Patients: Comparison of a High-pitch Dual-source CT Image Acquisition versus Retrospective ECG-Gating

James Ravenel, MD
A Multicenter, Community Based Chart Review of the Management of Small (8-15 mm) Nodules by Pulmonologists.

– Chest Keynote Speaker

Lucas Geyer, MD
Low Volume, Low Iodine Concentration Contrast Medium Protocol for Comprehensive CT Planning of Transcatheter Aortic Valve Replacement

– CT Evaluation of Coronary Artery Stents: Impact of an Integrated Circuit Detector with Iterative Reconstruction

Kevin Garrett, MD
Resident Interpretation of On-Call “Triple-Rule-Out” CT Studies in Patients with Acute Chest Pain

Paul Apfaltrer, MD
Cardiac Mortality and Morbidity in Breast Cancer Survivors after Radiation Therapy – Is Coronary Atherosclerosis the Culprit?

Ullrich Ebersberger, MD
Vitria Adisetiyo, PhD
Medication Naïve Attention-deficit/Hyperactivity Disorder Subjects have Low Brain Iron Levels as Detected by Magnetic Field Correlation Imaging

Timothy Amrhein, MD
Relationship of Ordering Physician MRI Equipment Ownership to the Frequency of Negative Cervical Spine MRI

Refresher Course

Etta Pisano, MD
Research Evidence

U.J. Schoepf, MD
Cardiac CT Perfusion for Coronary Artery Disease
-Imaging Right Heart Dysfunction and Prognostication

Walter Huda, PhD
Quality and Safety 2013: Best Practices, Radiation and Contrast Media

Series

U.J. Schoepf, MD
Applications
- Cardiac Radiology Series: Cardiac Dual Energy CT

Multi Session

U.J. Schoepf, MD
Cardiac CT Mentored Case Review: Part III (In Conjunction with the North American Society for Cardiac Imaging) (An Interactive Session)
Scientific Poster

Paul Apfaltrer, MD
Cardiac Mortality and Morbidity in Breast Cancer Survivors after Radiation Therapy – Is Coronary Artery Disease the Culprit?

Education Exhibit

Aleksander Krazinski
Cardiovascular Manifestations of Williams Syndrome: Imaging Findings
Department of Radiology and Radiological Science
96 Jonathan Lucas Street, MSC 323
Charleston, South Carolina 29425
Phone: (843) 792-1414 * Fax: (843) 792-1889
Website:
http://clinicaldepartments.musc.edu/radiology/