# Radical Views... from the Department of Radiology September 2009

Mon	Tues	Wed	Thurs	Fri
3:00 - 4:00 ED meeting [W ED annex] (check with Sheila Blalock 4-2506))	<b>1</b> 7:30 - 8:15 Breast Conference (TBA) 8:15 - 9:00 Breast Conference	<b>2</b> 7:30 - 8:15 "Looking at the Chest Radiograph: Systematic Perception (Bankier) 8:15 - 9:00 Chest Cases (Bankier)	<b>3</b> 7:30 - 8:15 Bone Tumors I (Wu) 8:15 - 9:00 Bone Tumors (Wu)	<b>4</b> 7:30 - 9:00 Grand Rounds: QA 12:00 - 1:00 Resident Case Conference (Kleefield) [Clouse Rm]
	1:00 - 2:00 MRI meeting (weekly) TCC-484	11:00-12:00 MSK clinical conference (weekly) 12:00-1:00 (weekly)	12:00 - 1:30 Abd meeting (weekly) WCC-354 12:00-1:00	
		Thoracic Imaging meeting GI Oncology/GU Oncology meeting	MSK meeting (weekly)	
<b>7</b> Labor Day	8 10:30-11:30 Nuc Med meeting (GZ-103)	<b>9</b> 7:30 - 8:15 Thyroid/Parathyroid (McArdle) 8:15-9:00 Bone Scans - Benign Disease (Kolodny)	10 7:30 - 8:15 Neuro Conference TBA (Teich) 8:15 - 9:00 Congenital Brain (Peri) EVENT: ABR Physics Exam	<b>11</b> <b>7:30-9:00</b> <b>EVENTS: ABR Physics Exam</b> 12:00 - 1:00 No Resident Conf. nce 12:00-1:00 US section meeting [TCC-247A] <b>3:45 - 6:45</b> <b>NERRS: Abdominal Imaging</b>
<b>14</b> 7:30 - 9:00 Abdominal Conference (Siewert)	<b>15</b> 7:30 - 8:15 Breast Conference (TBA) 8:15-9:00 Breast Conference (TBA) 8:00 - 9:00 IR meeting	16 7:30 - 8:15 Imaging of pulmonary Infection 1 ( Romero) 8:15 - 9:00 Chest Cases (Romero) 300-4:00 Mammo meeting [TCC-484]	<b>17</b> 7:30 - 8:15 Bone Tumor Cases (Eisenberg) 8:15-9:00 Bone Tumors III (Wu)	<b>18</b> 7:30 - 9:00 Grand Rounds: Renal Mass Mgmt - Recent Rad Advances & Future Challenges (Silverman) 12:00 - 1:00 Resident Case Conference (Hackney) [Clouse Rm]
<b>21</b> 7:30-9:00 Abdominal Conference (Lee)	<b>22</b> 10:30-11:30 Nuc Med meeting (GZ-103)	<b>23</b> 7:30 - 8:15 Ultrasound Physics, Artifacts, & Safety ( Levine) 8:15-9:00 Renal Scintigraphy (Hill)	24 7:30 - 8:15 White Matter Disease (Bhadelia) 8:15-9:00 Advanced Brain Tumor Imaging (Rojas)	<b>25</b> 7:30 - 9:00 Chief Rounds 12:00 - 1:00 Resident Case Conference (Moonis) [Clouse Rm]
28 7:30 - 9:00 Abdominal Conference (Wei)	<b>29</b> 7:30 - 8:15 Breast Conference (TBA) 8:15-9:00 Breast Conference (TBA)	<b>30</b> 7:30 - 8:15 ICU Radiography (Spirn) 8:15-9:00 Lung Cancer: Rad/Path Correlation (Visiitng Prof. Dr. Abbott)		

### **DEPARTMENTAL NEWS, AWARDS & HONORS**

### A fond farewell to Yolanda Milliman-Richard, RN - Radiology Nurse Manager

We are delighted at the wonderful career opportunity that has opened up for Yolanda across the road at Childrens' Hospital, but will miss her more than we can or will ever admit. Yolanda has been a fixture, so to speak, at the BIDMC since entering nursing school in 1984. Like many outstanding caregivers, Yolanda started her nursing career at the Deaconess Hospital where she worked in the ICU's. She progressed rapidly up the ranks to become a clinical advisor and an admission facilitator or "bed Babe" as she fondly referred to it. Anyway, moving right along, in the fall of 2003 Yolanda "Florence Nightingale" Milliman joined Radiology as the Nurse Manager. Yolanda embraced the position with skill and devotion developing her leadership presence through collaboration with a new peer group, the technical managers, while maintaining a strong



Best wishes, Yolanda, new Director of Nursing at Children's Hospital!

relationship with Patient Care Services to educate and collaborate on patient care issues. She became and to this day is a strong clinical partner with the radiologists enhancing our quality, safety and regulatory performance. She has played a central role in translating performance concepts into clinical reality, and has been a major strength in developing the reputable quality program we have in our department. Here are some quotes from staff; "She always knew who to call in the medical center for assistance with patient care issues", "She made daycare really feel like part of the radiology team", "A role model for professional nursing", "Able to take a negative and help see the positive and learn from the mistake", "Most wonderful manager I ever had", "always has a smile". As Yolanda herself will tell you, with her contagious smile and ever cheerful disposition, she is fabulous, and she really is. It's not often that one can agree with self-pronouncements of this kind, but in Yolanda's case, it's true, she is fabulous and more. She is our bed babe! She knows everyone and everything, (even things she shouldn't), has an uncommon knack for remembering each and every hospital policy and how it should be implemented, and can solve all clinical problems in a thoughtful flash. We will all miss her for her clinical expertise, but more for her fearless personality and for her totally wicked sense of humor. "Yolanda injected her compassion and care skills as a nurse into our team binding us professionally but also enhancing our comradely". "She helped continue the culture of cooperation amongst Nursing and Radiology Imaging and was a great resource to tap in thinking through QA processes; creating multidisciplinary alliances and keeping us all Joint Commission ready!". We could go on with the accolades (while waiting for her to arrive at the meeting!) but only want her to know how much we and her multitude of patients have enjoyed the interactions, her enthusiasm, her charm, her ever positive outlook, and her seemingly endless abundance of energy made readily available to her coworkers. Yolanda, go well, good luck, and thank you for allowing us to participate in this portion of your wonderful journey. We'll always keep a place open for you at the preprocedure timeout!!

# - Donna Hallett and Jonny Kruskal

# Notice of ACR Award

Please join me in congratulating 4th yr resident **Aarti Sekhar** on receiving a \$1500 Goldberg/Reeder Travel Grant from the American College of Radiology (ACR). The grant was established in 2008 to support residents seeking to provide a month's worth of medical service in a developing country. The program was named after Barry Goldberg, M.D. and Maurice "Mo" Reeder, M.D., two individuals who have dedicated their life's work not only to advancing medical science in radiology, but to disseminating knowledge, equipment, materials and goodwill to developing countries throughout the world. Aarti will be travelling to Moshi, Tanzania where she will participate in the resident program and clinic at KCMC. I am sure this will be an enriching experience for her and we are proud for her to represent our department. - *Jim Wu* 

# Grant Award Supplement

Dr. Phillip Boiselle was awarded a Recovery Act Administrative Supplement Award for \$174,000 (\$102,000 direct) for his NIH R01 "CT Diagnosis of Tracheomalacia in patients with COPD." The goals of this administrative supplement are to accelerate the tempo of the Boiselle team's scientific research by creating a new research administrative position and purchasing some additional office equipment that will enhance their ability to recruit a diverse population of COPD participants and to increase the pace of enrollment and data analysis. Dr. Boiselle will be using the majority of the funding to support a 2-year research admin job for a recent college graduate that they have identified.

# R01 HL 084331 CT Diagnosis of Tracheomalacia in Patients with COPD

The broad, long-term goals are to determine the prevalence and natural history of tracheomalacia among patients with chronic obstructive pulmonary disease (COPD) and to establish the role of a novel CT method in guiding therapy and assessing response to intervention. This work also has the potential to reduce morbidity among patients with coexisting COPD and tracheomalacia. Chronic cough is the fifth most common symptom for which patients seek medical care in the United States, accounting for more than 30 million office visits per year. Acquired tracheomalacia, a condition defined by excessive expiratory collapse of the trachea due to weakness of the airway walls and/or supporting cartilage, is a relatively common but frequently overlooked cause of chronic cough. Tracheomalacia is associated with a variety of risk factors, most notably COPD. Importantly, tracheomalacia can cause significant respiratory morbidity if left untreated, and it may rarely be fatal. Our preliminary studies demonstrate that paired inspiratory-dynamic expiratory CT is a highly accurate, noninvasive method for diagnosing tracheomalacia, with comparable accuracy to the current gold standard of bronchoscopy, an invasive procedure. This is a collaborative, multidisciplinary diagnsotic study by the departments of radiology, pulmonary medicine, thoracic surgery, pathology, and anesthesia at BIDMC. We propose the following specific aims: Aim 1: Determine the prevalence of tracheomalacia among patients with COPD; Aim 2: Identify physiological and clinical parameters that are predictive of tracheomalacia in patients with COPD; Aim 3: Determine the natural history of tracheomalacia in the absence of intervention among subjects who are asymptomatic or mildly symptomatic; and Aim 4: Identify factors that are predictive of a positive response to intervention by assessing longitudinal changes in key parameters among severely symptomatic participants following therapy. The import of the proposed study is two-fold: 1) it will noninvasively determine the prevalence and natural history of tracheomalacia among patients with COPD; and 2) it has the potential to reduce morbidity among patients with coexisting COPD and tracheomalacia.

# US School Progress Report

BIDMC School of Diagnostic Medical Sonography Graduates First Class!

The BIDMC ultrasound department is proud to announce the graduation of its first class! The 2009 graduates are Atara Korik and Elizabeth Rosenberg. Atara and Elizabeth completed the BIDMC 18-month certificate program in Diagnostic Medical Sonography here at BIDMC.

The class of 2009 has had many accomplishments to date. Atara and Elizabeth each completed over 2,000 clinical hours in ultrasound training here at BIDMC. They presented a research poster to the Society of Diagnostic Medical Sonography Annual Conference in fall 2008. Atara and Elizabeth have both passed their Sonographic Principles and Instrumentation exam through the American Registry of Diagnostic Medical Sonographers. These accomplishments significantly exceed the standards of sonography students and programs! We are so proud of the class of 2009!

The ultrasound department is pleased to announce that both graduates will be staying with BIDMC as staff sonographers!

\*\* The BIDMC DMS Program would like to thank each and every BIDMC sonographer for their contribution to the success of the program. \*\* Please join us in congratulating the class of 2009!

- Cory Finn, BS, RDMS Program Director

- Deborah Levine, MD Medical Director



# Speaking of Quality, the following letter from a satisfied patient acknowledges great work across all levels of staff, and provide a model of the kind of care and caring we're striving for throughout the department. Kudos to Interventional Radiology.

# Dear Dr. Kruskal,

I am a frequent flyer in the IR department because of surgically placed G and J tubes which must be routinely replaced every four months....

# RECENT PROCEDURE 8/4/09 (TUESDAY: 10:00 AM)

The team working on me [was] a great grace to my life. I would be criminally negligent if I did not bring their extraordinary performance to your attention, as the chief honcho. Let me list them all, and detail what each did to make my procedure seamless and flawless.

*Janice Kulas,* IRIAngio Associate, who always comes through when I call about a dilemma or an appointment. She is your PR person. You could have a fortune spent on advertising campaigns about caring for patients, but she does it par excellence. She is worth a million dollars, and is better than any PR campaign you could run. She cares, and means it. Her function is to funnel to Jonathan Underhill for resolution. I called Janice about five days before my procedure, expressing concern that the experimental G tube, put in about a year ago, kept falling out because it had no retention device. Janice funneled me to Jonathan Underhill for resolution.

**Jonathan Underhill,** PA for IR, who took Janice's call and ran with it. He went back into my medical record, over centuries, to see what and why certain decisions were made. He did it on a day when he was extremely taxed, but got back to me by the end of the day with the solution. He would bring the problem and the research to the radiologist performing my procedure for consideration. It was a radiologist I had never met before, or been treated by in the past.

*Mary Finley,* IRIAngio Receptionist who greeted me when I came in to register on 8/4/09. My anxiety level could not have been higher because of all the unknowns: what tube, what radiologist, pain or no pain, technique or no technique, just to name a few of my concerns. Her professionalism and hospitality put me at ease while I waited for Jon Underhill to clear me for the procedure. She is a most gracious woman.

*Judith Senier,* IR Nurse who came out to get me changed, and to usher me into the procedure room. There are no words to describe the calming effect she had on my troubled psyche. I was expecting a horror show, and I was getting pampered at every step. She stayed with me, holding my hand and assuring me all would be well.

**Richard Plaistowe,** IR Tech who is well known to me because I am there so often. It was like seeing an old friend. We had some great chitchat while he sterilized me and draped me for the procedure. What a prince among men, and aren't you and I lucky to have the likes of him administering to patients at such a critical juncture?

*Madan Reddy,* MD. IR Fellow who was previously unknown to me, and whose gentle ways and superb techniques, under the tutelage of Laura Perry, made the experience anxiety free. Acting in tandem with Dr. Perry, the young Doc was superb. He has great hands, and never manhandled me. See if you can retain him this time. You need that kind of technique as it is conspicuously missing amongst your male radiologists. This kid is "golden".

*Laura Perry, MD*, IR Attending. Where have you been Laura Perry? She is radiologist cubed. Words fail me. When I got home I was so relieved not to have been assaulted, I cried, out of relief, because I had met a radiologist who could do the job perfectly without sedation. If you have technique, you don't need sedation, and Laura has technique Imagine...she came in prepared, as she had scoured the medical record prior to the procedure. I did not have to relate the whole damn story of the past fifteen years. She researched my tube problem and made suggestions with a show and tell. Again, PREPARED. She explained, at great length, everything she was doing as she tutored Madan and me during the procedure. Calm, professional, talented, creative, gentle, communicative, assuring....need I say more?

In conclusion Dr. Kruskal, let me suggest, in all humility, when you have a magnificent group such as this, don't screw it up. Your department has been in turmoil for so long, and that translates to patient loss of faith. In response to my positive experience, I have contacted the OLEY FOUNDATION at the Albany Medical Center. The Oley people advocate for "tube people". They are often asked for referrals by those who need to have tubes placed for the first time about where to go and whom to call. I would not have recommended BIDMC since Gloria's departure, sad for me to say. I would recommend Dr. Perry and Dr. Reddy to anyone and everyone in the area should I have cause. You are back on the road to glory.

This is a long letter. Forgive me, but I did not want to leave anyone out of the missive. Everyone listed played a role in the success story of 8/4/09. When it is good, it is very, very good. It was superb.

I am ccing all mentioned, as well as their supervisors. I would hope the letter for each would end up in their personnel folder to be instrumental in each one's performance appraisal. This excellence deserves more than an "atta-girl" or an "atta-boy", a non-descript pat on the head. I will leave it to you to respond in kind.

Infinitas Gratias, Diane V. Owens

# What's New at Harrington



On Thursday, July 30th, we had the open house for the state-of-the-art Women's Center at Harrington Hospital, which includes the mammography department. It was a successful event by all means- very well organized and very well attended. Thanks to all for the efforts and to the work involved in arranging this wonderful event. - Rola Shaheen, Director of Radiology, Harrington Memorial Hospital



# September Visiting Professor: Stuart G. Silverman, MD, FACR

Friday, Sept. 18 Grand Rounds 7:30 AM - 9:00 AM Sherman Auditorium?? "Renal Mass Management - Recent Radiological Advances and Future Challenges"

Dr. Silverman graduated from the University of Rochester School of Medicine and Dentistry and completed internship training in internal medicine at Strong Memorial Hospital; and residency and fellowship in diagnostic radiology at Massachusetts General Hospital. Dr. Silverman is currently Director of Abdominal Imaging and Intervention, CT, Cross-Sectional IR at Brigham and Women's Hospital. His clinical interests include abdominal intervention, CT scanning, CT of the urinary tract, renal cancer, MRI-guided cancer ablation and MRI-guided intervention.

Dr. Silverman's research focuses on interventional radiologic techniques in the abdomen and the imaging of renal cancers. The purpose of the interventional research is to develop innovative techniques, and evaluate their safety, efficacy and contribution to the diagnosis and treatment of abdominal cancers. Specific generic aspects of image-guided intervention that are evaluated include the process of accurately targeting deep and small tumors and the process of monitoring and controlling new percutaneous cancer therapies. Research projects are aimed at the design, development, and evaluation of the percutaneous non-surgical ablation of abdominal tumors. Current trials are actively using MRI to guide the percutaneous cryablation of live, kidney, and adrenal gland tumors. CT, MRI and three-dimensional imaging are utilized in the evaluation of their role in the imaging of renal tumefactions and how to differentiate benign from malignant disease in the kidney. This work uses feature description and analysis of image-based features.

# **Quality and Safety Rotation:**

In accordance with the ACGME requirement for successful completion of an outcomes project, all of our radiology residents now participate in a quality, safety and performance improvement rotation. Initially developed by Katy Krajewski during her QA elective (and published in Academic Radiology 2009,xx;xx), this was the first such educational experience to be developed in the country and has undergone much improvement since its initial description. The focus has shifted away from a 4 week didactic experience (focussing on patient safety, quality assurance, risk management and methodology of QI) to a more clinically-oriented experience. Residents now identify an outcomes project in their area of clinical interest and are mentored through the steps from project conception, development, planning, data collection and analysis, to presentation/publication. In this way the rotation is spread out over their residency and when specific time is assigned to the rotation, educational materials including powerpoint lectures, web sites, and a host of relevant articles are made available for online study. This unique experience exposes the resident to the tools and methodologies of performance improvement, highlights important aspects of risk management for radiologists, prepares our residents for their ABR Maintenance of Certification once they graduate from our program (specifically the mandatory Practice Quality Improvement project), and satisfies ACGME training requirements. We believe that this first-in-the-nation rotation exemplifies our commitment to quality improvement, to education and to training our residents to be leaders in this essential and rapidly expanding field of radiology.

# Did you know....

According to the Centers for Disease Control, 2,000,000 people each year become ill as a result of a hospital-acquired infection. Proper hand hygiene is critical to the prevention of these infections - which contribute to the death of nearly 90,000 hospital patients per year and \$4.5 billion in medical expenses.

Nurses, doctors and other healthcare workers can contaminate their hands by doing simple tasks, such as:

- taking a patient's vital signs
- · assisting patients with mobility
- · touching the patient's gown or bed sheets
- touching equipment, including bedside rails, walkers, crutches and IV pumps

# Prevention

- Good Hand hygiene significantly reduces the number of organisms found on your hands.
- Studies have shown that good hand hygiene practices reduce nosocomial (hospital acquired) colonization/infection with organisms that can lead to patient morbidity and mortality.

### When Is Hand hygiene Recommended?

- Upon entering the patient room and upon leaving the patient room
- Upon entering and leaving the patient unit
- · After touching the patient or their environment
- Before donning and after removing gloves
- Prior to performing invasive procedures (e.g. inserting IVs, spinal tap)
- Before eating, drinking or handling food
- After using the restroom
- Whenever hands are visibly soiled, contaminated with physical dirt or organic material you must always perform a hand wash with water using soap or an antimicrobial soap

# ✓How to Improve Compliance in Radiology?

Compliance with hand hygiene in Radiology is determined by direct observations. Each month, observers visit the various modalities and observe hand hygiene practices. What's the most common hand hygiene practice not followed?

### Performing hand hygiene before donning gloves!!

Reaching your "dirty" hand into a box of gloves contaminates the gloves you are donning and the gloves and box your hands come into contact with. The best way to improve our department compliance rate is to perform hand hygiene before donning gloves.



*Did you know....* is a new monthly feature designed to keep us up to date on necessary and relevant policies. Please contact Lynn Darrah, MSPT, MHA, Radiology Quality Management Team at Idarrah@bidmc.harvard.edu for more information.

# Monthly Section Updates: Nuclear Medicine, Gerald Kolodny, MD, Section Chief

# Clinical:

We have four nuclear medicine physicians, one Harvard Medical School Joint Program in Nuclear Medicine resident, and 14 staff technologists. In 2008 we performed about 9,200 nuclear medicine studies. Over the past year we have experienced a decline in the number of myocardial perfusion and PET/CT studies due to the referring physician incentives put in place by BIDPO/HMFP specifically for those studies. This has led to a decrease in four staff technologists during the past year. However, there has been a significant increase in the number of gastric emptying studies, due to the work of **Dr. Kevin Donohoe** on the national scene, in conjunction with the American Society of Gastroenterology, to standardize and publicize this procedure.

We will shortly be replacing our end of life nuclear medicine gamma cameras on Shapiro 4, which were devoted to cardiac nuclear medicine studies, with a new state of the art camera allowing the cardiac patients to be scanned in a more comfortable semirecumbent position. Our cardiac nuclear medicine studies will then vacate Shapiro 4 and be centralized with our other east campus non PET/CT studies on the first floor of the hospital building.

Dr. Donohoe is chair (and **Dr. Tony Parker** is a member) of the *Society of Nuclear Medicine Procedure Guidelines Committee*, which is responsible for standardizing nuclear medicine clinical procedures worldwide. Dr. Donohoe is also a member of the Society of Nuclear Medicine House of Delegates and of the SNM Health Care Policy Committee as well as the SNM representative to the National Quality Forum, a national government committee that is establishing guidelines for medical imaging to use in pay-for-performance measures. Dr. Parker was the Sub-chair for InfoSNM (Computer Presentations) of the SNM Scientific Program Committee.

### **Training:**

We are members of the Harvard Medical School Joint Program in Nuclear Medicine, and participate actively in their teaching program as well as our BIDMC Radiology Department residency training program. Dr. Donohoe is the Associate director of our BIDMC radiology residency program and Dr. Parker is the associate director of the JPNM residency training program. Dr. Parker is a member of the American Board of Nuclear Medicine and of the Nuclear Medicine Residency Review Committee of the Accreditation Council for Graduate Medical Education. Our one hour daily section morning teaching conference and daily teaching and research conferences within the JPNM provide a broad range of educational activities for our resident trainees.

We have an accredited 13-month post baccalaureate certificate nuclear medicine technology school within the section, with 6-8 students per year. Students in that program have been the recipients of several honors during the year which include one Paul Cole Scholarship Award, sponsored by the Society of Nuclear Medicine (SNM). All 6 students had their research abstracts accepted as oral presentations at the annual SNM meeting in Toronto. Additionally, all 6 students received SNM travel grant awards which are given out to the top 25 scored abstracts. We have a 100% first time pass rate on the national certification boards and are currently ranked number 4 in the country on the basis of our scores on the examinations for certification.

# Research:

We have a very active research program chiefly centered on ground breaking research in applications of PET/CT. The following is a list of current ongoing research studies:

- BIDPO has put in place monetary incentives for referring 1) physicians to reduce three high tech diagnostic studies. Two of those three are nuclear medicine myocardial perfusion studies and PET/CT studies. Examining the data on the number of myocardial perfusion studies ordered in 2005 and 2008 reveals that, while cardiologists ordered the same number of myocardial perfusion studies in both years, APG and HCA physicians ordered half the number of myocardial perfusion studies in 2005 as in 2008. Although this appears to represent a huge savings in health care dollars, we are interested in whether there has or has not been an increase in other health care expenses as a result of this shift. For example, has this resulted in more cardiac ultrasound, cardiac cath, or CTA studies? Has there been an increase in ED or hospitalizations for cardiac disease? Can we document that there has been a reduction in the percentage of normal myocardial perfusion studies? A radiology resident, as part of the new requirement to do a Q/A study during our residency training program, is currently working on this project.
- 2) In conjunction with studies above, we want to demonstrate the predictive power of a myocardial perfusion study interpreted as normal in our department. As part of a resident Q/A study, we are following a cohort of patients with normal myocardial perfusion studies. Our strong assumption, based on experience with these patients, is that they have a very low incidence of cardiac events in the 2-3 year period following the study. Presenting such data to our referring physicians could be helpful in reducing the need for further diagnostic tests of patients with normal myocardial perfusion studies and guide referring physicians in using myocardial perfusion as the first step in diagnosing myocardial ischemia.
- We have pioneered a method to reduce background myocardial and brown fat FDG activity on PET/CT studies.

This has enabled us to visualize nodal disease in the mediastinum, neck and supraclavicular areas which otherwise would be obscured. This has led to a BIDMC patent application, royalty payments to BIDMC and several publications.

- 4) By suppressing the normal myocardial background uptake of FDG, we were then in a position to identify foci of FDG uptake in the inflammatory cells which accompany coronary plaque. Our published studies showed a high association of foci of FDG activity in association with calcified plaques within the coronary arteries. This study was followed by another, recently published in conjunction with an editorial noting our work, and which was done in collaboration with BIDMC cardiologists, which described an association between coronary foci of FDG activity and angiographically demonstrated plaque. [Wykrzykowska, 2009;Werner, 2009]
- 5) In examining foci of FDG uptake within coronary arteries on repeat studies we noted a waxing and waning of activity in different plaques, raising the possibility that coronary plaque development was similar to an autoimmune process. Patients with rheumatoid arthritis are known to have a high incidence of coronary disease. We approached and our now working with our BIDMC rheumatology colleagues preparing an IRB protocol to study the relationship between the intensity of FDG uptake in coronary foci and the course of rheumatoid arthritis in the same patients. We have also enlisted a BIDMC cardiology fellow in this project.
- 6) As a result of our work with brown fat (BAT) we approached the endocrinologists at Joslin Clinic, who have a specific interest in BAT, about several research projects. Using a program designed by our nuclear medicine PACS software support, we were able to show

definitively that FDG could be used to identify and monitor BAT activity, and to define factors influencing BAT activity. This work was recently published in the New England Journal of Medicine. [Cypess, 2009]

- 7) In collaboration with our endocrinology partners at the Joslin Clinic we have recently received a Harvard University catalyst grant to explore activity of BAT, as measured by FDG PET/CT, in patients receiving bone morphogenic protein (BMP) for spine surgery. BMP is a transcription factor that our colleagues have found will stimulate conversion of preadipocytes into BAT cells. BAT cells burn calories, thus helping to maintain a lower body weight. We intend to determine whether BMP will also increase the activity of BAT in humans.
- 8) PET/CT scans normally show large and small bowel activity. This normal activity can often mask, or be confused with nodal uptake or primary bowel inflammatory disease or bowel tumors. In order to reduce this bowel activity it is first necessary to show where it is located. Current thinking is that the normal activity is in the smooth muscle of the bowel wall, since gastrointestinal physiology teaching is that glucose (for which FDG is an analog) passes from the gut into the circulation and not in the other direction. This has led to several unsuccessful attempts to reduce this activity by slowing bowel motility. However, simple observation of this activity on PET/CT studies appears to show that the unwanted activity is in the bowel contents. We have approached our GI colleagues interested in inflammatory bowel disease and enlisted a collaborative IRB approved study to compare the location of the bowel activity at the time of their clinically indicated PET/CT scan and two hours later, after they have had two donuts and a cup of coffee. If the activity has moved it will confirm that the activity is in the bowel contents and permit us to employ methods to reduce intestinal bacterial uptake of FDG. This study is being supported with a small in kind grant from Dunkin Donuts.
- 9) The BIDMC Division of Nuclear Medicine has pioneered the use of computers in radiology. We had the first all digital RTAS, the first department wide PACS, the first to use teleradiology on a routine clinical basis and the first to use the internet and cable modems on a routine clinical basis. Over the years we have written several ground breaking publications for this work, including one for which we were honored as the first publication of a clinical department wide PACS. For several years we

have made our nuclear medicine PACS software available freely from our website. Over 1,500 downloads have been registered for the third version of our software. We are now rewriting our software in java, so that it will become shareware and others can freely modify or add to it. It will then run under multiple operating systems including Linux, to which platform the BIDMC IS department is slowly converting.

- 10) Patients are frequently referred to us for myocardial perfusion scans because of abdominal symptoms thought to be related to myocardial ischemia. Other patients are referred for hepatobiliary scans with symptoms thought to be related to gallbladder disease. In some of these patients the radiopharmaceutical is seen to reflux into the stomach and possibly the esophagus, after it is excreted into the small bowel. This raises the possibility that the patients symptoms are not the result of myocardial ischemia or gallbladder disease, but actually the result of gastric reflux. To further investigate this possibility, we are doing a retrospective study, in collaboration with the Division of Gastroenterology, of patients with reflux and normal myocardial perfusion or normal gallbladder function, to determine whether reflux was determined to be the cause of their symptoms. There is currently no good method to quantify the degree of gastric reflux and the use of gallbladder or myocardial radiopharmaceuticals may permit quantitative determination of reflux to monitor the effect of therapy to reduce reflux.
- 11) In association with our colleagues in gynecology, we are investigating an experimental radiopharmaceutical that tracks folate metabolism, which may help direct chemotherapy for ovarian cancer.
- 12) We are collaborating with a group at the University of Massachusetts Medical School that is working on digital restoration of SPECT images for tumor detection.
- 13) In collaboration with our colleagues at the B&W Hospital we have just finished a study on post-operative renal function in patients that have had a pyeloplasty.
- 14) In collaboration with our Renal Section Radiology Department colleagues we are engaged on a project to predict post-operative function of native kidneys after liver-renal transplant.
- 15) In conjunction with the Frangioni Laboratory, we are examining the use of fluorescent tracers for lymphoscintigraphy.

# 2009 Notable Publications from our Faculty Members [New citations in Blue]

We do a monthly PubMed search for new BIDMC publications and may miss those in which your affiliation is not noted. If we miss your paper, please send the reference to dwolfe@bidmc.harvard.edu to be included in next month's issue.

Akram K, **Parker JA**, **Donohoe K**, **Kolodny G**. Role of single photon emission computed tomography/computed tomography in localization of ectopic parathyroid adenoma: a pictorial case series and review of the current literature. Clin Nucl Med. 2009 Aug;34(8):500-2.

<u>Anderson SW</u>, **Kruskal JB**, **Kane RA**. Benign hepatic tumors and iatrogenic pseudotumors. Radiographics 2009; 29:211-229.

Appelbaum E, Kirtane AJ, Clark A, Pride YB, Gelfand EV, Harrigan CJ, Kissinger KV, **Manning WJ**, Gibson CM. Association of TIMI Myocardial Perfusion Grade and ST-segment resolution with cardiovascular magnetic resonance measures of microvascular obstruction and infarct size following ST-segment elevation myocardial infarction. J Thromb Thrombolysis 2009; 27:123-129.

Appelbaum E, **Manning WJ**. Science to practice: can the combination of resting first-pass myocardial perfusion and late gadolinium-enhanced cardiovascular MR imaging help identify myocardial infarction resulting from coronary microembolization? Radiology 2009; 250:609-611.

Appelbaum L, **Kane RA**, **Kruskal JB**, **Romero J**, Sosna J. Focal hepatic lesions: US-guided biopsy--lessons from review of cytologic and pathologic examination results. Radiology 2009; 250:453-458.

<u>Asch E</u>, **Levine D**, **Pedrosa I**, Hecht JL, **Kruskal J**. Patterns of Misinterpretation of Adnexal Masses on CT and MR in an Academic Radiology Department(1). Acad Radiol. 2009 Apr 18. [Epub ahead of print]

Atkins MB, Bukowski RM, Escudier BJ, Figlin RA, Hudes GH, Kaelin WG Jr, Linehan WM, McDermott DF, Mier JW, **Pedrosa I**, Rini BI, Signoretti S, Sosman JA, Teh BT, Wood CG, Zurita AJ, King L. Innovations and challenges in renal cancer: summary statement from the Third Cambridge Conference. Cancer. 2009 May 15;115(10 Suppl):2247-51.

Blaha M, Budoff MJ, Shaw LJ, <u>Khosa F</u>, Rumberger JA, Berman D, Callister T, Raggi P, Blumenthal RS, Nasir K. Absence of coronary artery calcification and all-cause mortality. JACC Cardiovasc Imaging. 2009 Jun;2(6):692-700.

**Boiselle PM**, O'Donnell CR, **Bankier AA**, Ernst A, Millet ME, Potemkin A, Loring SH. Tracheal Collapsibility in Healthy Volunteers during Forced Expiration: Assessment with Multidetector CT. Radiology. 2009 May 6. [Epub ahead of print]

Brodoefel H, Burgstahler C, Sabir A, Yam CS, Khosa F, Claussen CD, Clouse ME. Coronary plaque quantification by voxel analysis: dual-source MDCT angiography versus intravascular sonography. AJR Am J Roentgenol 2009; 192:W84-89.

<u>Brodoefel H</u>, Burgstahler C, Heuschmid M, Reimann A, <u>Khosa F</u>, Kopp A, Schroeder S, Claussen C, **Clouse M**. Accuracy of dual-source CT in the characterization of non-calcified plaque: use of a colour-coded analysis compared with virtual histology intravascular ultrasound. Br J Radiol 2009.

Brook OR, Beck-Razi N, Abadi S, Filatov J, Ilivitzki A, **Litmanovich D**, Gaitini D. Sonographic detection of pneumothorax by radiology residents as part of extended focused assessment with sonography for trauma. J Ultrasound Med. 2009 Jun;28(6):749-55.

Brown DB, Cardella JF, Sacks D, **Goldberg SN**, Gervais DA, Rajan DK, Vedantham S, Miller DL, Brountzos EN, Grassi CJ, Towbin RB; SIR Standards of Practice Committee, Angle JF, Balter S, Clark TW, Cole PE, Drescher P, Freeman NJ, Georgia JD, Haskal Z, Hovsepian DM, Kilnani NM, Kundu S, Malloy PC, Martin LG, McGraw JK, Meranze SG, Meyers PM, Millward SF, Murphy K, Neithamer CD Jr, Omary RA, Patel NH, Roberts AC, Schwartzberg MS, Siskin GP, Smouse HR, Swan TL, Thorpe PE, Vesely TM, Wagner LK, Wiechmann BN, Bakal CW, Lewis CA, Nemcek AA Jr, Rholl KS. Quality improvement guidelines for transhepatic arterial chemoembolization, embolization, and chemotherapeutic infusion for hepatic malignancy. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S219-S226, S226.e1-10.

Brown DB, Gould JE, Gervais DA, **Goldberg SN**, Murthy R, Millward SF, Rilling WS, Geschwind JF, Salem R, Vedantham S, Cardella JF, Soulen MC; Society of Interventional Radiology Technology Assessment Committee and the International Working Group on Image-Guided Tumor Ablation. Transcatheter therapy for hepatic malignancy: standardization of terminology and reporting criteria. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S425-34.

**Burstein D**. Tracking longitudinal changes in knee degeneration and repair. J Bone Joint Surg Am 2009; 91 Suppl 1:51-53.

**Burstein D**, Gray M, Mosher T, Dardzinski B. Measures of molecular composition and structure in osteoarthritis. Radiol Clin North Am. 2009 Jul;47(4):675-86. Review.

**Burstein D**, Hunter DJ. "Why aren't we there yet?" Re-examining standard paradigms in imaging of OA Summary of the 2nd annual workshop on imaging based measures of osteoarthritis. Osteoarthritis Cartilage. 2009 May;17(5):571-8. Epub 2009 Feb 9.

Cantin L, Bankier AA, Eisenberg RL. Bronchiectasis. AJR Am J Roentgenol. 2009 Sep;193(3):W158-71.

Chan PG, Smith MP, Hauser TH, Yeon SB, Appelbaum E, **Rofsky NM**, **Manning WJ**. Noncardiac pathology on clinical cardiac magnetic resonance imaging. JACC Cardiovasc Imaging. 2009 Aug;2(8):980-6.

Chan J, **Manning WJ**, Appelbaum E, Smith P, Rice K. Large hiatal hernia mimicking left atrial mass: a multimodality diagnosis. J Am Coll Cardiol. 2009 Aug 4;54(6):569.

Choi HS, Ipe BI, Misra P, Lee JH, Bawendi MG, **Frangioni JV**. Tissue- and organ-selective biodistribution of NIR fluorescent quantum dots. Nano Lett. 2009 Jun;9(6):2354-9.

Chuang ML, **Manning WJ**. Left ventricular hypertrophy and excess cardiovascular mortality is late gadolinium enhancement the imaging link? J Am Coll Cardiol 2009; 53:292-294.

Ciocan R, **Lenkinski RE**, Bernstein J, Bancu M, **Marquis R**, **Ivanishev A**, **Kourtelidis F**, Matsui A, Borenstein J, **Frangioni JV**. MRI contrast using solid-state, B(1)-distorting, microelectromechanical systems (MEMS) microresonant devices (MRDs). Magn Reson Med 2009; 61 (4): 860-866 APR 2009

Clark TW, Millward SF, Gervais DA, **Goldberg SN**, Grassi CJ, Kinney TB, Phillips DA, Sacks D, Cardella JF; Technology Assessment Committee of the Society of Interventional Radiology. Reporting standards for percutaneous thermal ablation of renal cell carcinoma. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S409-16.

**Clouse ME**. Coronary plaque quantification: is there a "gold standard?" J Cardiovasc Comput Tomogr 2009; 3:32-34.

Cypess AM, Lehman S, Williams G, Tal I, **Rodman D**, Goldfine AB, Kuo FC, Palmer EL, Tseng YH, Doria A, **Kolodny GM**, Kahn CR. Identification and importance of brown adipose tissue in adult humans. N Engl J Med 2009; 360:1509-1517.

Dinh T, Doupis J, Lyons TE, Kuchibhotla S, Julliard W, Gnardellis C, Rosenblum BI, Wang X, Giurini JM, **Greenman RL**, Veves A. Foot Muscle Energy Reserves In Diabetic Patients Without And With Clinical Peripheral Neuropathy. Diabetes Care. 2009 Jun 9. [Epub ahead of print]

**Donohoe KJ**, Maurer AH, Ziessman HA, Urbain JL, Royal HD, Martin-Comin J. Procedure Guideline for Adult Solid-Meal Gastric-Emptying Study 3.0. J Nucl Med Technol. 2009 Aug 19. [Epub ahead of print] Dugar A, Farley ML, Wang AL, Goldring MB, Goldring SR, Swaim BH, Bierbaum BE, **Burstein D**, Gray ML. The effect of paraformaldehyde fixation on the delayed gadolinium-enhanced MRI of cartilage (dGEMRIC) measurement. J Orthop Res 2009; 27:536-539.

**Eisenberg RL**, **Romero J**, **Litmanovich D**, **Boiselle PM**, **Bankier AA**. Tuberculosis: Value of Lateral Chest Radiography in Pre-employment Screening of Patients with Positive Purified Protein Derivative Skin Test Results. Radiology. 2009 Jun 9. [Epub ahead of print]

**Eisenberg RL**. Thickening of small bowel folds. AJR Am J Roentgenol. 2009 Jul;193(1):W1-6. Review.

**Eisenberg RL**. Bubbly lesions of bone. AJR Am J Roentgenol. 2009 Aug;193(2):W79-94.

Elliott R, **Bloch NB**, Dewolf W, Fu Y, Sanda M, Tomaszewski J, Wagner A, **Rofsky N**, Genega EM. Seminal Vesicle Invasion at Radical Prostatectomy: Correlation with Magnetic Reasonance [sic] Images. Modern Pathology. 2009; 22:167A-167A 753 Suppl. 1 Jan 2009.

Elliott R, **Bloch NB**, Dewolf W, Fu Y, Sanda M, Tomaszewski J, Wagner A, **Rofsky N**, Genega EM. Seminal Vesicle Invasion at Radical Prostatectomy: Correlation with Magnetic Reasonance [sic] Images. Laboratory Investigation. 2009; 89:167A-167A 753 Suppl. 1 Jan 2009

Ernst A, Rafeq S, **Boiselle P**, Sung A, Reddy C, Michaud G, Majid A, Herth FJ, Trentham D. Relapsing polychondritis and airway involvement. Chest 2009; 135:1024-1030.

Fox CS, Gona P, Hoffmann U, Porter SA, Salton CJ, Massaro JM, Levy D, Larson MG, D'Agostino RB, Sr., O'Donnell CJ, **Manning WJ**. Pericardial Fat, Intrathoracic Fat, and Measures of Left Ventricular Structure and Function. The Framingham Heart Study. Circulation. 2009 Mar 31;119(12):1586-91. Epub 2009 Mar 16.

**Ganguli S, Camacho M, Yam CS, Pedrosa I**. Preparing first-year radiology residents and assessing their readiness for on-call responsibilities: results over 5 years. AJR Am J Roentgenol 2009; 192:539-544.

Gansler DA, McLaughlin NC, Iguchi L, Jerram M, Moore DW, **Bhadelia R**, Fulwiler C. A multivariate approach to aggression and the orbital frontal cortex in psychiatric patients. Psychiatry Res 2009; 171:145-154.

Genega EM, **Bloch NB**, Dewolf W, Elliot R, Fu Y, Sanda M, Tomaszewski J, **Rofsky N**. Correlation of Gleason Score and Tumor Size with Magnetic Reasonance [sic] Image-Detected Prostate Cancer. Modern Pathology. 2009; 22: 170A-170A 767 Suppl. 1 Jan 2009

Genega EM, **Bloch NB**, Dewolf W, Elliot R, Fu Y, Sanda M, Tomaszewski J, **Rofsky N**. Correlation of Gleason Score and Tumor Size with Magnetic Reasonance [sic] Image-Detected Prostate Cancer. Laboratory Investigation. 2009; 89: 170A-170A 767 Suppl. 1 Jan 2009

Gervais DA, **Goldberg SN**, Brown DB, Soulen MC, Millward SF, Rajan DK. Society of Interventional Radiology position statement on percutaneous radiofrequency ablation for the treatment of liver tumors. J Vasc Interv Radiol 2009; 20:3-8.

Gervais DA, **Goldberg SN**, Brown DB, Soulen MC, Millward SF, Rajan DK. Society of Interventional Radiology position statement on percutaneous radiofrequency ablation for the treatment of liver tumors. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S342-7.

Gioux S, Mazhar A, Cuccia DJ, Durkin AJ, Tromberg BJ, **Frangioni JV**. Threedimensional surface profile intensity correction for spatially modulated imaging. J Biomed Opt. 2009 May-Jun;14(3):034045.

**Goldberg SN**, Grassi CJ, Cardella JF, Charboneau JW, Dodd GD 3rd, Dupuy DE, Gervais DA, Gillams AR, **Kane RA**, Lee FT Jr, Livraghi T, McGahan J, Phillips DA, Rhim H, Silverman SG, Solbiati L, Vogl TJ, Wood BJ, Vedantham S, Sacks D; Society of Interventional Radiology Technology Assessment Committee and the International Working Group on Image-guided Tumor Ablation. Image-guided tumor ablation: standardization of terminology and reporting criteria. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S377-90.

Gourtsoyianni S, <u>Zamboni GA</u>, **Romero JY**, **Raptopoulos VD**. Routine use of modified CT Enterography in patients with acute abdominal pain. Eur J Radiol 2009; 69:388-392.

Guermazi A, Eckstein F, Hellio Le Graverand-Gastineau MP, Conaghan PG, **Burstein D**, Keen H, Roemer FW. Osteoarthritis: current role of imaging. Med Clin North Am 2009; 93:101-126, xi.

**Hackney DB**. Forget the diffusion--do we need T2-weighted MR images to detect early central nervous system injury? Radiology 2009; 250:303-304.

Hall FM. Computer-aided mammography screening. N Engl J Med. 2009 Feb 19;360(8):836. Hall FM. Quantity counts: industrial-academic relationships and disclosures. Radiology. 2009 May;251(2):612; author reply 612.

Hall FM. The radiology report of the future. Radiology. 2009 May;251:313-6.

Hall FM. Single-pass continuous whole-body CT for polytrauma. AJR Am J Roentgenol. 2009 Aug;193(2):594; author reply 594.

**Hall FM**. Frequency of diagnosis of atypical ductal hyperplasia on breast biopsy. AJR Am J Roentgenol. 2009 Sep;193(3):W253; author reply W254.

Hirsch AE, Mulleady Bishop P, Dad L, Singh D, **Slanetz PJ**. An increase in medical student knowledge of radiation oncology: a pre-post examination analysis of the oncology education initiative. Int J Radiat Oncol Biol Phys 2009; 73:1003-1008; quiz 1008 e1001-1008 e1002.

House M, **Bhadelia RA**, Myers K, Socrate S. Magnetic resonance imaging of three-dimensional cervical anatomy in the second and third trimester. Eur J Obstet Gynecol Reprod Biol. 2009 May;144 Suppl 1:S65-9. Epub 2009 Mar 17.

Humblet V, Misra P, Bhushan KR, Nasr K, Ko YS, Tsukamoto T, Pannier N, Frangioni JV, Maison W. Multivalent scaffolds for affinity maturation of small molecule cell surface binders and their application to prostate tumor targeting. J Med Chem 2009; 52:544-550.

Ibrahim T, Makowski MR, Jankauskas A, Maintz D, Karch M, Schachoff S, **Manning WJ**, Schömig A, Schwaiger M, Botnar RM. Serial contrastenhanced cardiac magnetic resonance imaging demonstrates regression of hyperenhancement within the coronary artery wall in patients after acute myocardial infarction. JACC Cardiovasc Imaging. 2009 May;2(5):580-8.

Jessel RH, Zurakowski D, Zilkens C, **Burstein D**, Gray ML, Kim YJ. Radiographic and patient factors associated with pre-radiographic osteoarthritis in hip dysplasia. J Bone Joint Surg Am. 2009 May;91(5):1120-9.

Kajimura S, Seale P, Kubota K, Lunsford E, **Frangioni JV**, Gygi SP, Spiegelman BM. Initiation of myoblast to brown fat switch by a PRDM16-C/ EBP-beta transcriptional complex. Nature. 2009 Jul 29. [Epub ahead of print]

Khaodhiar L, Brennan AM, Lima C, Chan JL, Mantzoros CS, **Manning WJ**, Danias PG, Veves A. Effect of valsartan on left ventricular anatomy and systolic function and aortic elasticity. Metabolism 2009; 58:682-688.

Kothavale AA, Yeon SB, **Manning WJ**. A systematic approach to performing a comprehensive transesophageal echocardiogram. A call to order. BMC Cardiovasc Disord. 2009 May 13;9(1):18. [Epub ahead of print]

**Kressel HY**. Expression of concern from the editor. Radiology. 2009 Jul;252(1):318.

**Kressel HY**. Comment from the editor on Lambertz et al in the September 2008 issue. Radiology. 2009 Jun;251(3):950.

Kritsaneepaiboon S, Lee EY, Zurakowski D, Strauss KJ, **Boiselle PM**. MDCT pulmonary angiography Evaluation of pulmonary embolism in children. AJR Am J Roentgenol 2009; 192:1246-1252.

**Kruskal JB**, <u>Anderson S</u>, **Yam CS**, Sosna J. Strategies for Establishing a Comprehensive Quality and Performance Improvement Program in a Radiology Department. Radiographics. 2009 Mar-Apr;29(2):315-29. Epub 2009 Jan 23.

Lattanzi R, Sodickson DK, **Grant AK**, Zhu Y. Electrodynamic constraints on homogeneity and radiofrequency power deposition in multiple coil excitations. Magn Reson Med 2009; 61:315-334.

Lee EY, **Litmanovich D**, **Boiselle PM**. Multidetector CT Evaluation of Tracheobronchomalacia. Radiol Clin North Am 2009; 47:261-269.

Lee EY, **Boiselle PM**. Tracheobronchomalacia in infants and children: multidetector CT evaluation. Radiology. 2009 Jul;252(1):7-22. Review.

Lee EY, Kritsaneepaiboon S, Zurakowski D, Arellano CM, Strauss KJ, **Boiselle PM**. Beyond the Pulmonary Arteries: Alternative Diagnoses in Children With MDCT Pulmonary Angiography Negative for Pulmonary Embolism. AJR Am J Roentgenol. 2009 Sep;193(3):888-94.

**Lenkinski RE**, <u>Wang X</u>, Elian M, **Goldberg SN**. Interaction of gadoliniumbased MR contrast agents with choline: Implications for MR spectroscopy (MRS) of the breast. Magn Reson Med 2009; 61 (6): 1286-1292 JUN 2009.

**Lin PJ**. Operational Logic and Functionality of Automatic Dose Rate and Image Quality Control of Conventional Fluoroscopy. Med. Phys 2009; 36 (5): 1486-1493.

Litmanovich D, Boiselle PM, Bankier AA. CT of pulmonary emphysema-current status, challenges, and future directions. Eur Radiol 2009; 19:537-551. **Litmanovich D**, Gourevich K, Israel O, Gallimidi Z. Unexpected foci of (18)F-FDG uptake in the breast detected by PET/CT: incidence and clinical significance. Eur J Nucl Med Mol Imaging. 2009 May 1. [Epub ahead of print]

Ly HQ, Hoshino K, Pomerantseva I, Kawase Y, Yoneyama R, Takewa Y, Fortier A, Gibbs-Strauss SL, Vooght C, **Frangioni JV**, Hajjar RJ. In vivo myocardial distribution of multipotent progenitor cells following intracoronary delivery in a swine model of myocardial infarction. Eur Heart J. 2009 Aug 17. [Epub ahead of print]

Mahgerefteh S, **Kruskal JB**, **Yam CS**, Blachar A, Sosna J. Peer Review in Diagnostic Radiology: Current State and a Vision for the Future. Radiographics. 2009 Jun 29. [Epub ahead of print]

Malloy PC, Grassi CJ, Kundu S, Gervais DA, Miller DL, Osnis RB, Postoak DW, Rajan DK, Sacks D, Schwartzberg MS, Zuckerman DA, Cardella JF; Standards of Practice Committee with Cardiovascular and Interventional Radiological Society of Europe (CIRSE) Endorsement [**Goldberg SN**, Contributor]. Consensus guidelines for periprocedural management of coagulation status and hemostasis risk in percutaneous image-guided interventions. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S240-9. Epub 2009 Apr 25.

Maron MS, Maron BJ, Harrigan C, Buros J, Gibson CM, Olivotto I, Biller L, Lesser JR, Udelson JE, **Manning WJ**, Appelbaum E. Hypertrophic cardiomyopathy phenotype revisited after 50 years with cardiovascular magnetic resonance. J Am Coll Cardiol. 2009 Jul 14;54(3):220-8.

Matsui A, Lee BT, Winer JH, Vooght CS, Laurence RG, **Frangioni JV**. Realtime intraoperative near-infrared fluorescence angiography for perforator identification and flap design. Plast Reconstr Surg 2009; 123:125e-127e.

Matsui A, Lomnes SJ, **Frangioni JV**. Optical clearing of the skin for near-infrared fluorescence image-guided surgery. J Biomed Opt. 2009 Mar-Apr;14(2):024019.

Matsui A, Lee BT, Winer JH, Laurence RG, **Frangioni JV**. Quantitative assessment of perfusion and vascular compromise in perforator flaps using a near-infrared fluorescence-guided imaging system. Plast Reconstr Surg. 2009 Aug;124(2):451-60.

Matsui A, Lee BT, Winer JH, Kianzad V, **Frangioni JV**. Image-guided perforator flap design using invisible near-infrared light and validation with x-ray angiography. Ann Plast Surg. 2009 Sep;63(2):327-30.

**McMahon CJ**, **Bloch BN**, **Lenkinski RE**, **Rofsky NM**. Dynamic contrastenhanced MR imaging in the evaluation of patients with prostate cancer. Magn Reson Imaging Clin N Am. 2009 May;17(2):363-83.

**McMahon CJ**, Shetty SK, Anderson ME, **Hochman MG**. Case Report: Longitudinal Stress Fracture of the Humerus: Imaging Features and Pitfalls. Clin Orthop Relat Res. 2009 Jul 9. [Epub ahead of print]

MacMahon PJ, Taylor DH, Duke D, **Brennan DD**, Eustace SJ. Disc displacement patterns in lumbar anterior spondylolisthesis: contribution to foraminal stenosis. Eur J Radiol. 2009 Apr;70(1):149-54. Epub 2008 Feb 19.

Miller JM, Dewey M, Vavere AL, Rochitte CE, Niinuma H, Arbab-Zadeh A, Paul N, Hoe J, de Roos A, Yoshioka K, Lemos PA, Bush DE, Lardo AC, Texter J, Brinker J, Cox C, **Clouse ME**, Lima JA. Coronary CT angiography using 64 detector rows: methods and design of the multi-centre trial CORE-64. Eur Radiol 2009; 19:816-828.

Moore DW, **Bhadelia RA**, Billings RL, Fulwiler C, Heilman KM, Rood KM, Gansler DA. Hemispheric connectivity and the visual-spatial divergent-thinking component of creativity. Brain Cogn. 2009 Aug;70(3):267-72. Epub 2009 Apr 7

Neema M, Goldberg-Zimring D, Guss ZD, Healy BC, Guttmann CR, Houtchens MK, Weiner HL, Horsfield MA, **Hackney DB**, **Alsop DC**, Bakshi R. 3 T MRI relaxometry detects T2 prolongation in the cerebral normalappearing white matter in multiple sclerosis. Neuroimage. 2009 Jul 1;46(3):633-41. Epub 2009 Mar 10.

**Nikolic B**, Elian M, <u>Mertyna P</u>, **Yam S**, **Goldberg SN**. The effect of hepatic radiofrequency ablation on stem cell trafficking in the rat model. J Vasc Interv Radiol. 2009 May;20(5):640-7; quiz 571.

**Nikolic B, Faintuch S, Goldberg SN**, Kuo MD, Cardella JF. Stem cell therapy: a primer for interventionalists and imagers. J Vasc Interv Radiol. 2009 Aug;20(8):999-1012.

<u>Nishino M</u>, <u>Lee KS</u>, Hatabu H. The spectrum of pulmonary sarcoidosis: Variations of high-resolution CT findings and clues for specific diagnosis. Eur J Radiol 2009.

Novak V, Haertle M, Zhao P, Hu K, Munshi M, Novak P, Abduljalil A, **Alsop D**. White matter hyperintensities and dynamics of postural control. Magn Reson Imaging 2009.

<u>Pahade JK</u>, **Litmanovich D**, **Pedrosa I**, **Romero J**, **Bankier AA**, **Boiselle PM**. Quality Initiatives: Imaging Pregnant Patients with Suspected Pulmonary Embolism: What the Radiologist Needs to Know. Radiographics. 2009 May-Jun;29(3):639-54. Epub 2009 Mar 30.

Pannier N, Humblet V, Misra P, **Frangioni JV**, Maison W. Multivalent peptidomimetics for tumor targeting. Adv Exp Med Biol. 2009;611:403-4.

Pannier N, **Frangioni JV**, Maison W. Mimicking natural globular structures with rigid scaffolds based on adamantane. Adv Exp Med Biol. 2009;611:99-100.

**Paulin S**. Coronary angiography by 64-row CT. N Engl J Med. 2009 May 7;360(19):2027-8; author reply 2029-30.

**Pedrosa I**, Lafornara M, Pandharipande PV, Goldsmith JD, **Rofsky NM**. Pregnant patients suspected of having acute appendicitis: effect of MR imaging on negative laparotomy rate and appendiceal perforation rate. Radiology 2009; 250:749-757.

**Pedrosa I**, **Alsop DC**, **Rofsky NM**. Magnetic resonance imaging as a biomarker in renal cell carcinoma. Cancer. 2009 May 15;115(10 Suppl):2334-45.

**Pedrosa I**, Ngo L, **Wei J**, Schuster M, <u>Mahallati H</u>, **Smith M**, **Rofsky NM**. Dynamic half-Fourier single-shot turbo spin echo for assessment of deep venous thrombosis: initial observations. Magn Reson Imaging. 2009 Jun;27(5):617-24. Epub 2008 Dec 23.

Peters DC, Wylie JV, Hauser TH, Nezafat R, Han Y, Woo JJ, Taclas J, Kissinger KV, Goddu B, Josephson ME, **Manning WJ**. Recurrence of atrial fibrillation correlates with the extent of post-procedural late gadolinium enhancement: a pilot study. JACC Cardiovasc Imaging 2009; 2:308-316.

Prasad V, Sacks BA, Kraus S, **Clouse ME**. Embolotherapy for lower urinary tract hemorrhage. J Vasc Interv Radiol. 2009 Jul;20(7):965-70. Epub 2009 Jun 5.

**Reddy AS**, **Dinobile D**, <u>Orgeta JE</u>, **Peri N**. Transoral approach to CT-guided C2 interventions. Pain Physician 2009; 12:253-258.

<u>Robson PM</u>, Madhuranthakam AJ, <u>Dai W</u>, **Pedrosa I**, **Rofsky NM**, **Alsop DC**. Strategies for reducing respiratory motion artifacts in renal perfusion imaging with arterial spin labeling. Magn Reson Med. 2009 Jun;61(6):1374-87.

Romney BP, <u>Khosa F</u>, Costa DN, Chan P, **Rofsky NM**, **Manning WJ**. Non-Cardiac Findings on Cardiovascular Magnetic Resonance Imaging Are Common: Impact of Imaging Sequences and Reading Session Format. Circulation 2008;118(18):S784-S785.

Rosen Y, **Lenkinski RE**. Sodium MRI of a human transplanted kidney. Acad Radiol. 2009 Jul;16(7):886-9. Epub 2009 Apr 17.

Ruberg FL, Appelbaum E, Davidoff R, Ozonoff A, Kissinger KV, Harrigan C, Skinner M, **Manning WJ**. Diagnostic and prognostic utility of cardiovascular magnetic resonance imaging in light-chain cardiac amyloidosis. Am J Cardiol 2009; 103:544-549.

<u>Salazar GM</u>, **Faintuch S**, Gladstone SR, Lang EV. In vitro Analysis of Downstream Particulates with Mechanical Thrombectomy Devices: Comparison of 20-kHz Sonothrombolytic and Rotating Dispersion Wire Systems. J Vasc Interv Radiol 2009.

Schor-Bardach R, **Alsop DC**, **Pedrosa I**, <u>Solazzo SA</u>, <u>Wang X</u>, **Marquis RP**, Atkins MB, Regan M, Signoretti S, **Lenkinski RE**, **Goldberg SN**. Does Arterial Spin-labeling MR Imaging-measured Tumor Perfusion Correlate with Renal Cell Cancer Response to Antiangiogenic Therapy in a Mouse Model? Radiology. 2009 Jun;251(3):731-742.

Schulman JM, Christison-Lagay ER, Kozakewich HP, **Boiselle PM**, Burrows PE, Fox VL, Fishman SJ. Macrocystic lymphatic malformation in the pulmonary parenchyma. Ann Thorac Surg 2009; 87:1607-1609.

Solomon SD, Appelbaum E, **Manning WJ**, Verma A, Berglund T, Lukashevich V, Cherif Papst C, Smith BA, Dahlof B. Effect of the direct Renin inhibitor aliskiren, the Angiotensin receptor blocker losartan, or both on left ventricular mass in patients with hypertension and left ventricular hypertrophy. Circulation 2009; 119:530-537.

Stankiewicz JM, Neema M, **Alsop DC**, Healy BC, Arora A, Buckle GJ, Chitnis T, Guttmann CR, Hackney D, Bakshi R. Spinal cord lesions and clinical status in multiple sclerosis: A 1.5 T and 3 T MRI study. J Neurol Sci 2009; 279:99-105.

Stoeck CT, Han Y, Peters DC, Hu P, Yeon SB, Kissinger KV, Goddu B, Goepfert L, **Manning WJ**, Kozerke S, Nezafat R. Whole heart magnetization-prepared steady-state free precession coronary vein MRI. J Magn Reson Imaging. 2009 May 26;29(6):1293-1299. [Epub ahead of print]

Sun MR, Ngo L, Genega EM, Atkins MB, Finn ME, Rofsky NM, Pedrosa I. Renal cell carcinoma: dynamic contrast-enhanced MR imaging for differentiation of tumor subtypes--correlation with pathologic findings. Radiology 2009; 250:793-802.

Tanaka E, Chen FY, Flaumenhaft R, Graham GJ, Laurence RG, **Frangioni** JV. Real-time assessment of cardiac perfusion, coronary angiography, and acute intravascular thrombi using dual-channel near-infrared fluorescence imaging. J Thorac Cardiovasc Surg. 2009 Jul;138(1):133-40.

Thomas JD, Zoghbi WA, Beller GA, Bonow RO, Budoff MJ, Cerqueira MD, Creager MA, Douglas PS, Fuster V, Garcia MJ, Holmes DR, Jr., **Manning WJ**, Pohost GM, Ryan TJ, Van Decker WA, Wiegers SE. ACCF 2008 Training Statement on Multimodality Noninvasive Cardiovascular Imaging A Report of the American College of Cardiology Foundation/American Heart Association/American College of Physicians Task Force on Clinical Competence and Training Developed in Collaboration With the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society for Vascular Medicine. J Am Coll Cardiol 2009; 53:125-146.

Tognolini A, Schor-Bardach R, Pianykh OS, Wilcox CJ, Raptopoulos V, Goldberg SN. Body Tumor CT Perfusion Protocols: Optimization of Acquisition Scan Parameters in a Rat Tumor Model. Radiology. 2009 Jun;251(3):712-20. Epub 2009 Mar 20.

Troyan SL, Kianzad V, Gibbs-Strauss SL, Gioux S, Matsui A, Oketokoun R, Ngo L, Khamene A, Azar F, **Frangioni JV**. The FLARE() Intraoperative Near-Infrared Fluorescence Imaging System: A First-in-Human Clinical Trial in Breast Cancer Sentinel Lymph Node Mapping. Ann Surg Oncol. 2009 Jul 7. [Epub ahead of print]

Vadnais M, Awtrey C, **Pedrosa I**. Breaking point: magnetic resonance imaging evaluation of an obstetric emergency. Am J Obstet Gynecol 2009; 200:344 e341-343.

Vedantham S, Thorpe PE, Cardella JF, Grassi CJ, Patel NH, Ferral H, Hofmann LV, Janne d'Othée BM, Antonaci VP, Brountzos EN, Brown DB, Martin LG, Matsumoto AH, Meranze SG, Miller DL, Millward SF, Min RJ, Neithamer CD Jr, Rajan DK, Rholl KS, Schwartzberg MS, Swan TL, Towbin RB, Wiechmann BN, Sacks D; CIRSE and SIR Standards of Practice Committees [**Goldberg SN**, contributor]. Quality improvement guidelines for the treatment of lower extremity deep vein thrombosis with use of endovascular thrombus removal. J Vasc Interv Radiol. 2009 Jul;20(7 Suppl):S227-39.

Walker LM, Katzir T, Liu T, Ly J, Corriveau K, Barzillai M, Chu F, O'Connor MG, **Hackney DB**, Chang BS. Gray matter volumes and cognitive ability in the epileptogenic brain malformation of periventricular nodular heterotopia. Epilepsy Behav. 2009 Jun 19. [Epub ahead of print]

Werner MK, **Parker JA**, **Kolodny GM**, English JR, **Palmer MR**. Respiratory gating enhances imaging of pulmonary nodules and measurement of tracer-uptake in FDG-PET/CT. Am J Roentgenol 2009 (in press).

<u>Williams G</u>, **Kolodny GM**. Retrospective study of coronary uptake of 18F-fluorodeoxyglucose in association with calcification and coronary artery disease: a preliminary study. Nucl Med Commun 2009.

Wykrzykowska J, Lehman S, Williams G, **Parker JA**, **Palmer MR**, Varkey S, **Kolodny G**, Laham R. Imaging of Inflamed and Vulnerable Plaque in Coronary Arteries with 18F-FDG PET/CT in Patients with Suppression of Myocardial Uptake Using a Low-Carbohydrate, High-Fat Preparation. J Nucl Med. 2009 Apr;50(4):563-8. Epub 2009 Mar 16.

Yao DF, DeWolf WC, Sanda MG, **Bloch BN**, Genega EM, Berry AM, Ngo L, **Rofsky NM**.Increased Positive Yield of Clinically Significant Prostate Cancer with Mri Prompted Biopsies. Journal of Urology 2009;181(4):2157.

Young BC, Hamar BD, **Levine D**, Roqué H. Medical management of ruptured appendicitis in pregnancy. Obstet Gynecol. 2009 Aug;114(2 Pt 2):453-6.

Zamboni GA, Gourtsoyianni S, Sourlas E, **Raptopoulos VD**. Value of customized scan timing determined by tracking liver enhancement in oncology patients. J Comput Assist Tomogr 2009; 33:253-258.

Zhao P, **Alsop DC**, Abduljalil A, Selim M, Lipsitz L, Novak P, Caplan L, Hu K, Novak V. Vasoreactivity and peri-infarct hyperintensities in stroke. Neurology 2009; 72:643-649.

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