



# Radical Views...

from the Department of Radiology

Volume 10, Number 3  
**OCTOBER 2017**



Beth Israel Deaconess  
Medical Center



HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL



**FROM THE CHIEF**  
Jonathan B. Kruskal, MD PhD

Dear All,  
I am delighted to announce that **Donna Hallet** has been appointed as **Chief Administrative Officer for Radiology**, effective, Monday, Sept. 18th.



*Donna Hallett, BSc  
Chief Administration  
Officer*

In this new capacity, Donna will serve as the senior administrative and operations leader for all radiology-related services both for Beth Israel Deaconess Medical Center as well as the HMFP Department of Radiology. Donna will be responsible for managing the administrative, financial, and operational business needs of our Department and its faculty in pursuit of excellence in our financial, clinical, educational, and research missions. The role also encompasses network development, research management, oversight of all educational programs and human resources, radiologist Faculty affairs including quality and compliance, revenue cycle performance and budget development, and our informatics and IT programs. This might sound like a lot of work, and it certainly is, and Donna and I will now set about to create an excellent team to support the department in this role.

I really am excited to have somebody with Donna's skills, devotion to operational excellence and her unique and proven track record as my executive partner, and I hope that each of you will welcome Donna to this new and important role for our department.

I am also happy to announce the following administrative and leadership appointments, promotions and transitions:



After serving their three-year terms on the BIH Radiology Foundation Board, I'd like to thank **Koenraad Mortele** and **Alex Bankier** for their service and commitment to our Foundation. Our two new Board members are **David Hackney** and **Muneeb Ahmed**, who join current members **Jim Wu**, **Tejas Mehta**, and **Debbie Levine**. Along with our two ex officio Board members, Alexa Kimball and myself, the Board oversees resources to support our educational and research missions.

To emphasize the importance of fostering and sustaining a diverse, inclusive and equitable workforce, I have asked **David Hackney** to join our Executive Committee and to oversee a new portfolio of Diversity and Equity. In David's new role as our **Vice Chair for Diversity and Equity**, he will establish a team to oversee and drive the many components of diversity that we should all be striving for.



To foster career advancement, and to provide smooth and continuous administrative coverage during absences, the following radiologists are officially being recognized as **Associate Section Chiefs** of their respective sections:

- |                     |                             |
|---------------------|-----------------------------|
| Emergency           | Karen Lee                   |
| Abdomen             | Bettina Siewert             |
| Breast              | Valerie Fein-Zachary        |
| Cardiothoracic      | Diana Litmanovitch          |
| Neuroradiology      | Rafeeqe Bhadelia            |
| Interventional Care | Sal Faintuch                |
| Musculoskeletal     | Colm McMahon                |
| Nuclear medicine    | Tony Parker                 |
| Community           | Marty Smith and Dean Rodman |

Please join me in congratulating our colleagues on these appointments.

Thank you  
- Jonny

**RSNA is coming!**  
Just a reminder to make sure that **Donna Wolfe** is notified of your participation at RSNA so it can be included in our annual BIDMC program

**E-Guide to BIDMC Radiology Scientific Sessions, Courses & Exhibits**

**RSNA 2017**  
Explore. Invent. Transform.  
103rd Scientific Assembly and Annual Meeting  
November 26 to December 1  
McCormick Place, Chicago

[dwolfe@bidmc.harvard.edu](mailto:dwolfe@bidmc.harvard.edu)

# Radiology Calendar OCTOBER 2017

Check for the most up-to-date schedule at: <https://apps.bidmc.org/departments/radiology/residency/conferences/displayMonth.asp>

Mon	Tues	Wed	Thurs	Fri
Weekly <b>Mon</b> Section Meetings: 3:00-4:00 ED section meeting [ED annex, WCC]		Weekly <b>Wed</b> Section Meetings: 11:00-12:00 MSK clinical conference 12:00-1:00 CardioThoracic, GI/GU Oncology 3:00-4:00 Mammo [TCC-484]	Weekly <b>Thurs</b> Section Meetings: 12:00 - 1:30 Abd [WCC-354] 12:00-1:00 MSK	*Note that as our 12 noon Friday Grand Rounds are held in the <b>Rabkin Board Room</b> , Shapiro-10, East Campus <i>(except when noted otherwise, i.e., Sherman Auditorium)</i>
<b>2</b> 7:30 - 8:15 Mammography Screening Guidelines (Tejas Mehta) 8:15 - 9:00 Calcifications in the Breast (Tejas Mehta)	<b>3</b> 7:30 - 9:00 WebEx Grand Rounds - Ultrasound (Edward Grant - USC)	<b>4</b> 7:30 - 9:00 Visitng Lecture (Visiting Lecturer: Frank Miller, Northwestern University) 12:00 - 1:00 Special Abdominal Cases (Dr. Frank Miller)	<b>5</b> 7:30 - 8:15 MQSA (Valerie J. Fein-Zachary) 8:15 - 9:00 Medical audit in breast imaging (Flipped Classroom) (Valerie J. Fein-Zachary) <b>4:00-5:00 West Med Rads - Senior Resident on West Body CT [Clouse]</b>	<b>6</b> 7:30 - 8:15 Professionalism Session (Program Directors)  <b>12:00 - 1:00 Grand Rounds: Peer Learning with Caese (Bettina Siewert)</b>
<b>9</b> 12:00-1:00 MRI meeting [Ansin 2]	<b>10</b> 7:30 - 9:00 Cardiac Lectures (Cardiac Imaging)  10:30-11:30 NMMI meeting [GZ-103]	<b>11</b> 8:00 - 9:00 Physics: Mammography vs General Radiography (Georgeta Mihai)  7:15-8:00 US meeting [WCC-304A]	<b>12</b> 7:30 - 9:00 Cardiac Lectures (Cardiac Imaging)	<b>13</b> 12:00 - 1:00 Guest Lecture: RADPAC (Ted Burnes)
<b>16</b> 7:30 - 8:15 Digital Breast Tomosynthesis (Parisa Lotfi) 8:15 - 9:00 Intro to Breast MRI (Parisa Lotfi)	<b>17</b> 7:30 - 9:00 WebEx Grand Rounds - Faculty Development (Lori Deitte - Vanderbilt)  <b>8:00-9:00 IR Meeting [West Recovery]</b>	<b>18</b> 7:30 - 9:00 Neuro Lecture TBD (Neuro Dept)	<b>19</b>	<b>20</b>
<b>23</b> 7:30 - 9:00 Guest Lecture (Scott Sher)	<b>24</b> 10:30-11:30 NMMI meeting [GZ-103]  7:30 - 8:15 Intro to Angiography & Arterial Anatomy (Muneeb Ahmed) 8:15 - 9:00 Pulmonary Embolism & DVT (Jeffrey Weinstein)	<b>25</b> 8:00 - 9:00 Physics: Mammography II (Da Zhang)  <b>12:00-1:00 Neuro case conference (Neuro fellows)</b>	<b>26</b> 7:30 - 8:15 Interventions for Hemorrhage (Sahil Mehta) 8:15 - 9:00 Cases and Topics in IR (Sahil Mehta)	<b>27</b> 7:30 - 8:15 Lecture (Michael Fishman)
<b>30</b>	<b>31</b>			

Oct-Nov, 2017

*The Gallery presents photos by Pete Gross, MD*  
*Arizona & New Mexico*  
*Breast Imaging Alumnus, Enthusiatic  
Photographer & Traveller*



## KOMMUNITY KORNER: Breast Imagers at Cradles to Crayons



Members of the breast section recently spent an evening volunteering at Cradles to Crayons, an organization that provides new and gently used items for families in the Greater Boston area.

**KUDOS** - Each month, we share the positive feedback we receive about staff members and ask you to join us in congratulating them; as always, we are especially proud to acknowledge an unprecedented constellation of staff for providing outstanding care and service and thank **Lauren Forbes** for taking on this column. Congratulations to:



Diagnostic Tech II **Holly Peterson Dodge** was concerned that a patient was ordered for the wrong test and raised her concern to Dr Bettina Siewert. Indeed Holly was correct, the patient was ordered for the wrong exam. This act of speaking up allowed us to "get it right" for this patient by averting an unnecessary exam, sparing the patient from a grueling bowel prep and ensuring the correct exam was ordered.

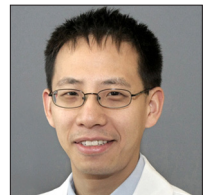
## Congratulations Patricia Coutinho de Souza, DVM, PhD



MRI Research Fellow **Patricia Coutinho de Souza** recently received a travel award to participate in the *16th Annual Workshop on the Pathology of Mouse Models for Human Disease*, which is being organized by The Jackson Laboratory in Bar Harbor, Maine.



Patricia is a veterinarian working with MRI/ Abdominal Imager **Leo Tsai** in his capacity as Director of Genitourinary Imaging on his funded mouse model research studies. Patricia is currently working with him on two major projects that involve A) Using hyperpolarized <sup>13</sup>C-tert-butanol to quantify perfusion within and between untreated and Sunitinib resistant renal cell carcinoma mouse xenografts, and B) using hyperpolarized <sup>13</sup>C-pyruvate to access regional tumor lactate production in N1S1 HCC rats with and without the presence of RFA in nearby liver tissue.



Both of these projects involve radiologic-pathologic correlation, and this workshop will help her to improve her knowledge of the pathology of several different mouse models for human disease, and also learn about new tissue markers for use in MRI.



Aideen Snell, MSW, CPXP  
Manager, Service Excellence  
Program x72570  
asnell@bidmc.harvard.edu

## AIDEEN SNELL: SERVICE EXCELLENCE & ACTION PLANNING (SEAP) COMMITTEE

Radiology Action Planning Committee's Patient Engagement

# Everyone wants to be "in the know"

**Did you know that many patients are less upset about their wait and more upset that no one communicated with them?**

**Rounding** the waiting and sub-waiting rooms to check-in with patients is a crucial step in creating a positive experience for our patients to:

- Keep them informed about waits and delays
- Give them timeframe updates
- Apologize to them for the wait and explain any unusual noises such as construction and alarms

This is a team effort and all of us can make a positive impact. If you are not sure how to explain a delay, ask your manager for helpful ways to communicate this to the patient. Often patients will be very appreciative but sometimes they may express frustration; that's okay. They just want to be heard and acknowledged and you are the perfect person to listen to them!

Our days can get so busy that we aren't aware of who's in the waiting room but rather focused on our next task. Try to take a step back and imagine that was you waiting for imaging or a member of your family. What would you want the staff to do?

Jill Mabry, CPXP, Director of Patient Experience, Carolinas HealthCare System and Dana Sanford, BSN, MSN, Director, Patient Experience & Maternity Services, Carolinas HealthCare System did a presentation on their experience with rounding. The results had a significant impact.

### Carolinas Healthcare System

- Over 65,000 employees across 47 acute care locations, 350+ care practices, and 35 emergency departments

### Impact of Rounding on Patient Perception

- Rounding is among the most widely used and highly effective from the patients' point of view
- Positive correlation; patients who observed hourly rounding were 29% more likely to rate hospital as a 9 or 10 and 27% more likely to give top box ratings for 'Likelihood to Recommend'
- High performing hospital was rated 95% when patient perceived hourly rounding; and 91% with perceived leader rounding

### Asking the Right Questions

- Remember the "why" and move from task centered to the opportunity to gain valuable information and improve patient experience
- Have to be present, not just go through the motions
- Not just a checklist, ask open ended questions
- Check your body language
- Practice active listening; go off script to hear their concerns

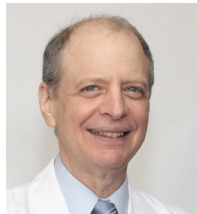




*Anu Shenoy-Bhangle,  
MD, Assoc. Director*



*Priscilla J. Slanetz,  
MD, MPH, FACR,  
Director*



*Ronald Eisenberg,  
MD JD, Assoc. Director*

## Liaison Responsibilities

This month, the program leadership would like to remind faculty about the educational responsibilities of the educational liaisons. Over the years, their role has grown given the increasing ACGME oversight and new accreditation process. In many sections, educational liaisons are designated not only to interact with residents but also are responsible for medical student education. We, the residency program leadership, would like to thank each of the liaisons for their dedication, time and efforts. Without these vital people, our department would not be able to continue to attract high quality trainees.

### Responsibilities of Section Educational Liaisons

Every BIDMC-located CLINICAL section (ED, chest, cardiac, neuro, MSK, breast, abdomen, nuclear medicine, IR, US) shall identify and appoint a faculty member to serve as the Educational Liaison for Trainee (residents and medical students) education. Serving in this role, this faculty member has the following responsibilities:

1. The liaison will work with other section faculty members to establish and update a standardized curriculum to meet the ongoing educational needs of trainees. This curriculum must prepare trainees to be successful practicing radiologists in addition to covering all components essential to the core and certifying board certification exams. Wherever possible, liaisons should use ACGME-developed curriculums.
2. The liaison, or designee, is responsible for orienting trainees to service on the first day of the rotation by 1) providing a detailed list of responsibilities and expectations and 2) by making the trainee aware of all appropriate and available educational resources (e.g. text books, digital resources, articles, videos).
3. At a minimum, for residents, the liaison must provide in-person feedback at the mid-point and at the end of each rotation of one-month duration. If the rotation is only 2-weeks in duration, feedback may occur only at the end of the 2-weeks, but it is encouraged to be sooner if there are any apparent performance issues. The liaison should seek out feedback from other faculty informally throughout the rotation. A formal discussion of each resident's performance should take place at the end of each rotation in order to provide a consensus overall evaluation.
4. The liaison must perform timely written evaluations of resident performance at the end of each rotation of greater than 2-week duration. The expectation is that these written evaluations will be completed in New Innovations within one month of a resident completing a rotation. The feedback should be both summative and formative, with specific suggestions for improvement.
5. The section liaison serves as a core faculty member of the diagnostic residency. As such, each liaison must undertake at least one scholarly project (e.g. presentation, publication) and complete one hour of faculty development annually (e.g. attend Education Grand Rounds, participate in BIDMC or HMS Academy event, attend core faculty training event at education committee meeting).
6. The section liaison is expected to attend at least 60% of the Education Committee meetings.

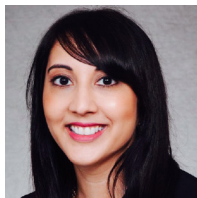
### Current section liaisons:

Section	Liaison
Body	Anu Shenoy-Bhangle / Dinushi Perera
Chest	Alex Bankier/Paul Spirn
Neuro	Elisa Flower
Angio	Jeff Weinstein
Cardiac	Diana Litmanovich
MSK	Jenny Ní Mhuircheartaigh / Jim Wu
Breast	Jane Karimova
ED	Sejal Shah
Nucs	Kevin Donohoe
TCC U/S	Debbie Levine

If a section liaison is unable to meet the above criteria, the Education Office will make every effort to work with the liaison to overcome any deficits.

However, if after remediation, the issues cannot be adequately resolved, the Education Office will request that the Section Chief appoint a different faculty member to fulfill this educational role.

# The #Radiology Twitterverse



Amy K. Patel, MD,  
Breast Imager and  
Twitter enthusiast

Social media in medicine, and particularly twitter, is being increasingly utilized by physicians, patient advocates, and all others on the healthcare team, providing an incredible way to connect on a global scale in ways which we have never seen. In fact, according to the results from the RANSOM survey in which both United States and European radiologists were surveyed, 85% of those who participated reported usage of some form of social media, with Twitter being more popular for professional usage.<sup>1</sup>

*However, there are many in our profession who find the concept of Twitter daunting and do not know where to begin. Thus, I have crafted this article to hopefully guide the twitter novice as well as strengthen the knowledge of a twitter erudite.*

## Twitter Basics

When you sign up for Twitter, you'll need to create a "handle," which is the way in which others will identify you. My twitter handle is @amykpatel. As a professional, it is often useful to choose a handle which people can readily identify who you are. Others add "MD" to their handle which is also completely acceptable.

In terms of the name that you list on your account which is displayed on your twitter profile above the handle, often physicians display their credentials at the end of their name, such as Amy K. Patel, MD. This can be invaluable when engaging with others on a professional level, building rapport, increasing your number of followers, etc.

It is also important to upload a photo in your profile and not leave the generic "egg head" picture displayed. Twitter users are more likely to follow you and engage in conversation if they see a face with the name.

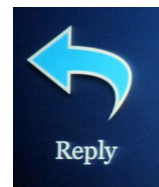
Your twitter account also allows you to include a 160 character profile or bio on your home page. Often, those in medicine include what type of physician they are and where, professional interests and organizational affiliations in which they hold a leadership position if applicable.

If you are not familiar with Twitter, you may see some abbreviations associated with tweets that leave you feeling perplexed. "RT" refers to a **re-tweet**, which indicates that someone is sharing your tweet word-for-word. "MT" refers to modified tweet, which means that your tweet has been shared but modified, often to meet the 140 character limit on a post.

Most Twitter tools allow for the option for you to "comment" or "quote tweet" when you are retweeting a post. Additionally, you can do the same on your own post, which can be an effective way to add more context to your tweet, so that your comment is directly linked to the original tweet.



If you would simply like to reply to another twitter user or participant, you can select the **reply icon**, denoted by the left turn arrow icon. During a tweet chat, it is important to remember to include the designated hashtag in those responses as well.



## Tweet Chats

Tweet chats in radiology are a fantastic way to engage in discussion with colleagues and patient advocates across a global scale, during radiology meetings and/or all year round. I have provided some information to demystify the basics of a virtual discussion with the hope that more radiologists at all levels of training will participate in the future.

## Before the Tweet Chat

Oftentimes, certain upcoming tweet chats will have questions posted prior so that potential participants can have time to peruse them and formulate answers they may want to share during the tweet chat. For example, JACR, which holds regular tweet chats every 4th Thursday of the month, has the topic and questions posted on its website beforehand, as well as reading materials so that participants are well informed and can contribute to a robust discussion.



Pre-drafting some responses can be useful, especially for those who may not be as "twitter conditioned" to think quickly and on the fly, as these tweet chats tend to occur at a rapid pace. However, it is recommended that you don't schedule responses on a social media management platform such as Hootsuite or Buffer, as the responses oftentimes don't flow with the conversation and oftentimes, randomly appear out of sequence. Moreover, this can also disrupt the flow to the overall discussion.



### During the Tweet Chat

Posts must be 140 characters or less and should include a particular hashtag associated with the tweet chat so that the discussion can be tracked during the chat and after. For example, the JACR tweet chats use the hashtag, #JACR, and the RADxx tweet chats use the hashtag #RADxx. As you draft your responses, always remain vigilant of which question is being discussed. For example, if your answer is in response to Topic 1, begin your answer with T1. Please note, that some tweet chats may use the terminology "Question 1," or even ask that your responses lead with an "A" for answer followed by the number pertaining to the question such as 1, 2, et cetera. Regardless, the proper response terminology should be specified at the initiation of the tweet chat.

If you run out of characters for a topic or answer, there are different ways to indicate on your tweet that your post is part of a series. For example, if you were participating in a JACR tweet chat, your tweet may look like this:

- T1 [1/2]: TYPE YOUR FIRST ANSWER HERE #JACR
- T1 [2/2]: TYPE YOUR SECOND ANSWER HERE #JACR

Your posts can be fortified by including graphics or website URLs that can may be of interest to those participating in the tweet chat. If you need to truncate the URL, you can use bit.ly to do this. However, some platforms such as TweetChat automatically shorten a URL.

There are a number of ways to follow the flow of a tweet chat, such as Twitter.com, TweetChat, and TweetDeck. You may also choose to use multiple platforms, just in case one is more effective and easier for you to navigate once the tweet chat begins. If you use twitter.com, sign in and search the designated tweet chat hashtag in the search bar at the top of the webpage. Once the search is complete, select the option "latest" in the search filter at the top of the page. This will allow you to see all of the latest tweets pertaining to that particular hashtag and will automatically populate new tweets that include that hashtag. A similar way this can be achieved is by participating in the tweet chat on your smart phone but following the tweet chat through the search filter through the twitter app on another device, such as your iPad.

### More information on TweetChat and TweetDeck:

**TweetChat:** Allows you to follow a feed that is associated with the hashtag that you provide. It also automatically adds the hashtag to the end of all of your tweets and includes a resource to shorten URLs. It will automatically populate new tweets that use the hashtag.

### TweetDeck:

Also allows you to track a particular hashtag. Using the application, first remove columns that may seem confusing by clicking and then selecting "remove." Once you have removed all of the columns, click the "plus" sign on the left-hand corner. Then a window will pop up, asking you to choose a column type and click search. In the search window, type in your hashtag and click it. Then click "add column" at the bottom of the pop-up, and a column will appear that shows, in close to real time, all tweets associated with that particular hashtag. Of note, if you are using Tweet Deck, you will manually have to type in the hashtag when you post. Additionally, as this platform is a bit more involved, it is recommended that you test the platform prior to the tweet chat.

### After the Tweet Chat:

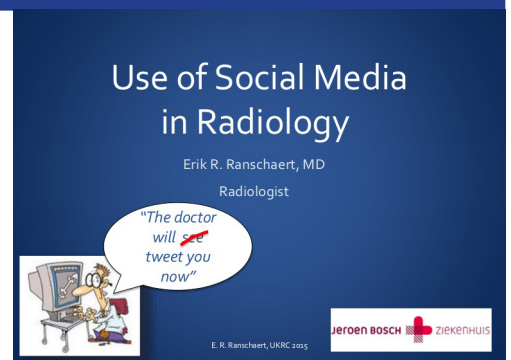
Although the main goal of a tweet chat, particularly in radiology, is to partake in real-time, stimulating discussion amongst colleagues and even patient advocates, continuing these discussions after the tweet chat are encouraged, including sharing resources. Using the designated hashtag is also helpful in furthering the discussion. As a result, these on-going discussions can be invaluable in growing your virtual network, ultimately providing an innovative way in continuing to strengthen relationships and knowledge in our profession.

Twitter utilization increasing exponentially, particularly in the realm of radiology. Those in radiology who are already quite active hope that all levels of training who are not will get on board and try this innovative way to connect with colleagues from all over the country and even the world. I hope to see you in the #Radiology twitterverse!

— Amy Patel, MD  
Breast Imaging Section

### References:

Ranschaert E, Van Ooijen P, McGinty G, et al. Radiologists' Usage of Social Media: Results of the RANSOM Survey. <https://link.springer.com/article/10.1007/s10278-016-9865-1>. Accessed 9/7/17.





2nd yr resident **Ken Wei**, Assoc. Residency Director **Anu Shenoy Bhangle** and 1st yr resident **Jose Santiago** represented BIDMC Radiology at Fourth Annual Harvard Affiliated Hospitals Residency Showcase held at the Elements Café, Joseph B. Martin Conference Center, HMS.

The Harvard affiliated residency showcase sponsored by the HMS office for Diversity inclusion and community partnership was attended by over 135 students. On the Harvard side, greater than 95 faculty, fellows, and residents from the Harvard affiliated training programs were present. We had the opportunity to interact with national and international medical students interested in applying for radiology and to showcase the strengths of our residency program.

**Stay in touch:**

Check out our **BIDMC Radiology Alumni Society page** and access our monthly **Radical Views**

You can also contact **Radical Views Editor Donna Wolfe** at [dwolfe@bidmc.harvard.edu](mailto:dwolfe@bidmc.harvard.edu) with updates, especially after completion of your residency or fellowship!

<http://radnet.bidmc.harvard.edu/education/newsletters.asp>

Beth Israel Deaconess Medical Center  
A TEACHING HOSPITAL OF HARVARD MEDICAL SCHOOL

Department of Radiology: Education Alumni Society

Search

- Home
- About Us
- Overview
- Contact Us
- Membership
  - Becoming A Member
  - Existing
  - Trustee Members
- People
  - Fellowship Matches
  - Where Are They Now?
  - Networking
- News & Events
  - Upcoming Events
  - Department Newsletters
  - In Print: A History

News & Events

Department Newsletters

Stay abreast of developments in the department with past issues of *Radical Views* featuring news, events, conferences, the latest publications, and more.

2017	2016	2015	2014	2013
January	January	January	January	January
February	February	February	February	February
March	March	March	March	March
April	April	April	April	April
May	May	May	May	May
June	June	June	June	June
July	July	July	July	July
August	August	August	September	September
September	September	September	October	October
October	October	October	November	November
November	November	November	December	December
December	December	December		



## New Column: Meet Our Transporters



Fritz Honore  
Supervisor, DX Transporters

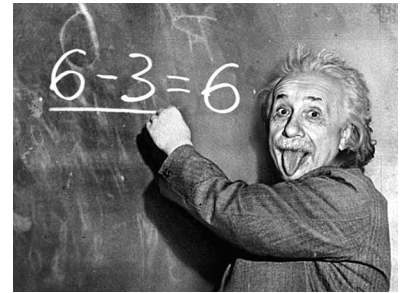
Our Radiology Transport staff keep our patients safe and moving so we can provide timely care, but do you know them? Here is a chance to get to know a little bit more about our transporters.

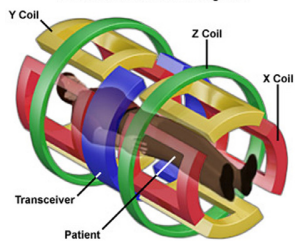
Thanks to Joaquin Thomas for agreeing to be our first star!



**Joaquin Thomas bravely** shares the following about himself:

1. How long have you been at BIDMC?  
10 years -- started off in the kitchen but the last 9 yrs. have been in Radiology
2. What is your favorite food?  
Anything Asian!
3. If you could invite someone, living or dead, to dinner who would it be and why?  
**Albert Einstein** - he would be interesting to talk to him about today's science.
4. What do you feel most proud of?  
My sense of humor -- it gets me through some interesting times!
5. What is your favorite music?  
I like everything, except deep-rooted country.
6. If you could travel anywhere, where would you go and why?  
Australia for its history. It's similar to the USA in a lot of ways but it developed differently.
7. If you could only bring three possessions to a deserted island, what would they be?  
iPhone, solar charger, and tent
8. How do you spend your free time?  
Contemplating ideas for a YouTube channel such as movie and tv show reviews.
9. What are you most afraid of?  
Too much success. I don't want to be well known. I wouldn't want to be a celebrity.
10. If you could witness any event of the past, present, or future, what would it be?  
Death of the dinosaurs -- was it an asteroid? What happened?



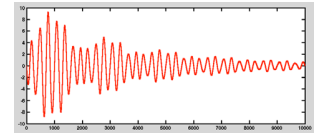


National High Magnetic Field Laboratory

BIDMC

# Radiology Residents & Fellows MRI Physics Course

2017-2018 Academic Year



## Purpose:

To provide fellows and residents with a basic understanding of MR physics, with emphasis on practical aspects of image acquisition such as protocol optimization and troubleshooting. A brief overview of fundamentals of nuclear magnetic resonance will provide an introduction to sources of image contrast in MRI. Techniques for image acquisition will be described, followed by an overview of the major families of MR pulse sequences. Topics such as accelerated imaging, fMRI, and diffusion tensor imaging will be discussed.

## Format:

All sessions will be held on Wednesdays, 5-6pm at the MRI Learning Lab, Ansin 220, starting July st.

## Text and Topics:

The recommended textbook is *"MRI in Practice," 4th Edition (2011)* by Catherine Westbrook. Supplementary reading from review articles will be recommended for advanced topics.

For more information, contact Aaron Grant, PhD: 7-3265

## TOPICS

- July 19:** The origin of the NMR signal. Nuclear magnetism. Nutation, precession, signal reception. Chemical shift. Relaxation, T1, T2. Spin dephasing, impact of gradients and magnetic field inhomogeneities.
- July 26:** Sources of contrast in MRI: T1 and T2 weighting, magnetization transfer, diffusion.
- August 2:** Overview of MR hardware. Image formation (1). Phase and frequency encoding. Basic k-space concepts.
- August 9:** No Lecture.
- August 16:** Image formation (2), Field-of-view, and resolution. k-space sampling for given imaging parameters, and effects of undersampling (aliasing, pseudo-noise). Accelerated imaging methods.
- August 23:** Signal-to-Noise: Image parameters that govern SNR. Trade-offs in image optimization.
- August 30:** Pulse sequences. Gradient echo, spin echo, steady state, EPI. STIR/FLAIR/IR etc. Fat suppression. Spectroscopy with PRESS, STEAM, CSI.
- September 6:** No lecture.
- September 13:** Effects of flow and diffusion. Flow compensation, time-of-flight, phase contrast, intro to diffusion.
- September 20:** Contrast-enhanced MRI. Types of magnetic materials. Relaxivity and image contrast as a function of dose, TR, TE. Dynamic contrast enhanced imaging, angiography. BOLD effect, fMRI.
- September 27:** Accelerated imaging. Parallel imaging and compressed sensing.
- October 4:** Diffusion-weighted imaging and DTI in neuro applications.
- October 11:** Arterial spin labeling in the brain and body.
- October 18:** Artifacts and troubleshooting.



J. DeFelipe Science 2010

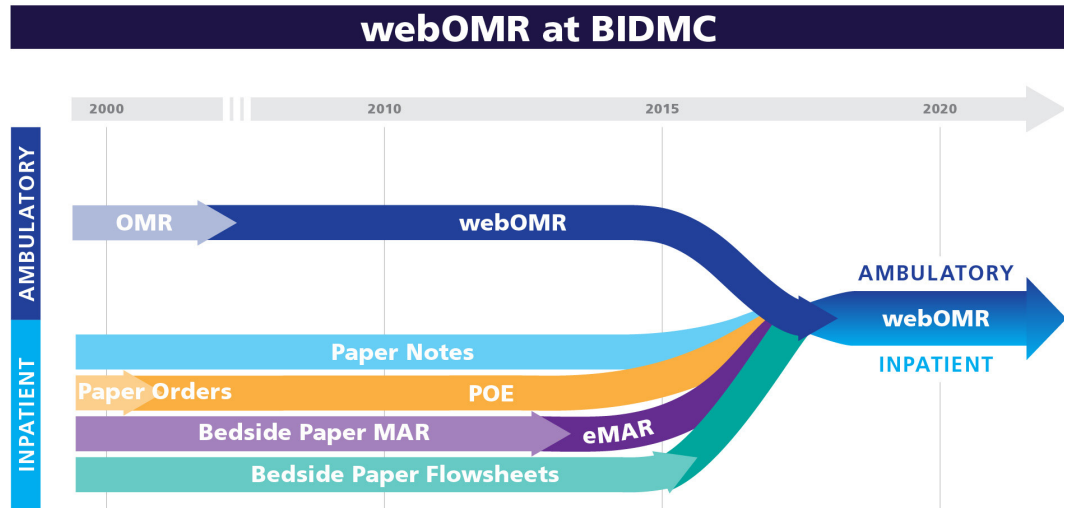
<https://portal.bidmc.org/Intranets/InformSys/WebOMR-Support/Inpatient-Overview.aspx>

The next major phase of BIDMC's multi-year initiative to transform inpatient paper charts to a fully electronic medical record launches Tuesday, June 13, with the migration of inpatient clinical notes to webOMR, BIDMC's online medical record application.

This project is ongoing, and we will continue to communicate details about additional features and components as soon as they are available.

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*Last edited by esloan on 6/12/2017*



**webOMR = Web Online Medical Record**  
**OMR = Online Medical Record**  
**POE = Electronic Physician Order Entry**  
**eMAR = Electronic Medication Administration Record**  
**eFlowsheets = Electronic Flowsheets**

**FREQUENTLY ASKED QUESTIONS** *[Sample]*

<https://portal.bidmc.org/Intranets/InformSys/WebOMR-Support/Inpatient-Overview/FAQs.aspx>

**Q: webOMR has been around for a long time. What's changing?**

A: webOMR is the application providers use to review labs, radiology reports, discharge summaries, and ambulatory clinic notes, as well as many inpatient consults and allied health provider notes (ex. PT, OT, Nutrition, etc.). With the introduction of functional enhancements to the application to better address workflow, all inpatient MD, NP and PA clinical notes (H&Ps, consults, progress, and final) will now be completed electronically in webOMR. Electronic notes written in webOMR will no longer be printed and placed in the paper chart.

[Go to Top](#)

**Q: What's the new functionality?**

A: New features include:

- A new tab structure and care setting that allow for viewing Outpatient, Inpatient and ED encounters separately, or all together;
- Additional note types unique to the inpatient setting (ex. Initial, Final Sign-off, Event, etc.);
- The ability to import inpatient data (medications, vital signs, etc.) into a note.

Some of this work is complete and some of it is still in development - to be released over the coming weeks and months. We have enough of the core functionality in place, however, to implement this policy change.

[Go to Top](#)

**Q: Will I still have to put a copy of my note into the paper chart?**

A: No. Beginning June 13, 2017, notes written in OMR will no longer need to be printed and placed in the paper chart.

[Go to Top](#)

**Q: Do I have to use OMR or can I still write notes in the paper chart?**

A: As of June 13, 2017, all MD, NP and PA notes must be written using OMR. The only exceptions will be notes that do not yet have a sufficient electronic solution – specifically:

- Progress notes from the following subset of surgical services:
  - ACS (Acute Care Surgery/Trauma)
  - Transplant
  - Vascular Surgery
  - McDermott
  - West 3
  - Blackburn
  - Thoracic Surgery
- Multi-author notes, such as Trigger Notes
- Multipage forms, such as those used by Trauma
- Procedure notes written on Medical Records-approved forms

**IMPORTANT:** The surgical services listed above will complete electronic notes in webOMR for any consultations (initial and daily) on patients outside of their service. For patients on these surgical services, daily progress notes will remain on paper on a temporary basis, as enhancements are developed to allow them to go fully electronic.

**2017 BIDMC Radiology Publications** – A PubMed search for new BIDMC publications is made each month; however, if we miss your paper, please send the reference to [dwolfe@bidmc.harvard.edu](mailto:dwolfe@bidmc.harvard.edu). Note that 1) Epub dates are included only in publications where the Epub and paper publication dates occur in different years, i.e., Epub in 2016 and paper publication in 2017; and 2) doi addresses are only included until citations are updated with hard copy page citations; and 3) Underlined names = relatively current trainees/alumni; **BOLD** names = Faculty/Staff

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Larson DB, **Kruskal JB**, Krecke KN, Donnelly LF. Key Concepts of Patient Safety in Radiology. *Radiographics*. 2015 Oct;35(6):1677-93. PMID: 26334571.