

Howard University Hospital  
Diagnostic Radiology Department  
Washington, D.C. 20060

# LEARNING & COURSE OBJECTIVES

For

Senior Elective Rotation in

## Diagnostic Radiology (Medical Imaging)

An update for 2015-2017

**See also:**

<http://www.huhealthcare.com/healthcare/hospital/departments/radiology/medical-students>

- Department: Diagnostic Radiology
- Site: Howard University Hospital, first floor,  
RADIOLOGY MAIN CONFERENCE ROOM 1-R78
- Chairman: Dr. Andre Duerinckx, MD-PhD
- Radiology Elective Program Coordinator: Dr. Bonnie Davis,  
202 - 865 6100 (HUH operator will then connect to her cell phone).
- CLINICAL FACULTY: **Drs Davis, Duerinckx, Sartip, Kim and others**
- NON-CLINICAL FACULTY: Drs Wang and McKetty
- Duration: 4 week rotations
- Max number of students: up to 6 students per **4 week rotation;**
- Radiology Elective Administrative Contact: Ms. Desta Golden, 202-865 1572 or 1576
- First Day Time: 8:00 AM.; other days: 800 AM to 4:45 PM.  
**Tuesday evenings : special Radiology Research sessions from 5 PM to 6:30 PM**
- SPECIAL IMAGING CONFERENCES: see listing in Department.

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Senior Elective Rotation in Diagnostic Radiology at Howard

### Course/ Rotation Goals:

- To provide a broader understanding of the principles of radiology and a familiarity with the many diagnostic techniques available, their values and limitations, and how they may best be used in the management of the patient.
- To train the student in the basic skills of image interpretation with emphasis on, but not limited to, the brain, neck, chest, abdomen, pelvis and extremities.

### Course Objectives:

At the end of this Elective Radiology Rotation, students should be able to:

- Understand the CLINICAL and TECHNICAL (including, the science and research) aspects of Radiology.
- **Be able to interpret major findings on Chest X-Ray**
- **Know and understand safety issues in Radiology clinical practice**
- Recognize basic anatomy and pathology as seen on imaging studies.
- Have a basic understanding of special imaging studies such as CT, Ultrasound, MRI, Fluoroscopy, Nuclear Medicine, interventional radiology, etc.
- Have a GLOBAL understanding about Medical Imaging and radiology.
- Understand how to prepare patients for radiology studies (dealing with allergies, contrast reactions, MRI safety, radiation exposure, etc..)
- **OPTION 1: Present an in depth discussion about one aspect of Radiology Safety or Quality Assurance (and –optionally- provide a short write up with potential for publication);**  
**(less likely ) Option 2: Present and Write a Radiology Case report and submit it for publication (active learning).**  
**Option 3: Present a review of literature on the impact of radiology teaching in medical school on future performances as an intern/ resident or practicing physician (and –optionally-provide a short write up with potential for publication).**

## **PHYSICIAN/ MEDICAL STUDENT ACGME**

### **COMPETENCIES:**

At the end of the 4 week rotation, we will check your improved competencies in:

- 1) **Patient Care:** You will learn how to better read an X Ray; understand basics of CT/MRI and ultrasound.
- 2) **Medical/Clinical Knowledge:** You will better know how to order an imaging test, and why and when to use contrast.
- 3) **Practice Based Learning Improvement:** You will better understand what QA is in Radiology;  
Understand who your customer is.
- 4) **Interpersonal and Communication Skills:**  
You will present two PowerPoints and discuss cases;
- 5) **Professionalism:** You will show up at 8 AM and at all conferences; you will spend lots of time at reading stations.
- 6) **System-Based Learning:** You will integrate radiology appropriateness criteria into your practices; you will know important Radiology web based resources.

## **LEARNING OBJECTIVES:**

At the end of the 4 week rotation,

- For RADIOLOGY QUALITY ASSURANCE (QA) and SAFETY the student should be able to:
  1. Identify two measures of Radiology QA.
  2. Be aware of the importance of incident reporting
  3. Know about contrast reactions and contrast safety (see later section)
  4. Know about MRI safety (see also later section);
  5. Understand malpractice implications of “communication in radiology”;
- For RADIOLOGY RESEARCH the student should be able to accomplish one or two of the following:
  1. **Successfully present a talk and write up on topics related to Radiology safety and Quality Assurance (including appropriate use of imaging studies);**
  2. **Successfully present, write up and submit a Radiology Case report within the first 3 weeks of the rotation.**
  3. **Understand and report on the impact of Radiology teaching during 4<sup>th</sup> year elective on performance as an intern/resident.**
- For CLINICAL RADIOLOGY the student should be able to:
  1. Identify three structures on normal chest, abdominal and joint radiographs.
  2. Recognize free air in the thorax and abdomen.
  3. Identify two causes of consolidation on chest radiograph.
  4. Describe two imaging findings seen in high grade bowel obstruction.
  5. Recognize one imaging finding associated with appropriate placement of support line and tube placement in the thorax and abdomen.
  6. Identify one imaging finding used to determine the presence of stones in the gallbladder, kidney and urinary bladder on CT imaging.
  7. Name one imaging characteristic to distinguish cystic from solid structures on sonography.
  8. Identify one imaging finding associated with moderate and large pulmonary emboli on CT imaging.

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9. Name two imaging criteria used to detect aortic aneurysm and dissection on CT imaging.
  10. Name one imaging finding used to identify, extra-axial fluid collections in the brain on CT imaging.
  11. Name two imaging findings used to recognize common fractures.
- For RADIOLOGY SAFETY and NON-CLINICAL TECHNICAL ASPECTS of RADIOLOGY the student should be able to:
    1. Recognize the term PACS and know what the abbreviation stands for.
    2. Name three areas of Radiology research being pursued at Howard University COM.
    3. Name one professor or research project associated with the Howard Molecular Imaging Laboratory.
    4. Name one approach on how to deal with Claustrophobia in MRI scanners;
    5. Name three contraindications to X-ray contrast administration for CT scanning.
    6. Name four parameters monitored during radiology Quality Assurance (QA) Programs at Howard University Hospital.

**Methods of Instruction:**

- In general: Daily interactive clinical observation combined with faculty and/or student lectures with faculty coordinator.
- Two afternoons every week: Work with CT, MR and VIR/Angio team members (technologists, nurses, staff) to better understand the need for pre-study preps, **informed consent** prior to contrast injections (CT / MR studies), **risk of contrast agents**, and informed consent for vascular interventional radiology (VIR) Procedures.
- Learn how to access patient information from <http://www.radiologyinfo.org/> to formally inform patients of any procedures done by VIR/angio teams.

- **CONFERENCES:** Weekly Tuesday NOON time Clinical Radiology Conference as well as many other interdisciplinary IMAGING Conferences (see separate listing).
- **RADIOLOGY EXAM Web site:** TEST YOUR KNOWLEDGE OF RADIOLOGY EACH WEEK: via INTERACTIVE Web Based GROUP EXAMS:  
 Before you can start with "Radiology ExamWeb", you need to create an account and sign up for the on line Radiology exams at:  
 RADIOLOGY EXAM web site:  
 Student site is: <http://radiology.examweb.com>  
 Directions are all in user manual provided on web site. Please create an account prior to coming to class. Your CLASS Code is: xxxxxxxx  
 You are allowed to answer questions as a group, and look up each topic on Google/Bing/.. prior to answering, except for the final exam in week #4.
- **ON-LINE LEARNING:** Utilize blocks of time set aside each day to study web-based teaching files and didactic lectures. A few selected web sites are:
  1. Auntminnie.com (<http://www.auntminnie.com/index.asp?Sec=edu>);
  2. \* Learning Radiology.com developed at Einstein Medical Center in Philadelphia, Pennsylvania by Dr Herring (see also TEXTBOOK), (<http://www.learningradiology.com/>);
  3. \* Introduction to Radiology **from University of Virginia Health System (great for Body CT, Emergency Radiology,..):**  
<http://www.med-ed.virginia.edu/courses/rad/>
  4. American College of Radiology (acr.org);  
 Daily cases at : <http://caseinpoint.acr.org/>;
  5. Rad.usuhs.mil/medpix/medpix
- Read-out sessions with various faculty members (clinical observation).
- Participate in interdisciplinary conferences where imaging studies play a key role:
  1. Attendance at Surgical Grand Rounds (9 a.m. Monday mornings) and Tumor Board Conferences (wed at Noon) , as well as other Tumor Board Conferences (Breast and Head&Neck) are required.

## 2. Participation in all Radiology Conferences.

### **Attendance:**

Students are expected to be available from 8:00 a.m. until 4:45 p.m. five days a week. Students need to sign in and out daily (log book). Interview time is permitted with prior approval. Each student is expected to attend lectures, conferences and read-out sessions as scheduled.

### **Research and Case Presentation:**

**Research is an integral part of today's medical school education.** We offer **three pathways** to full this requirement (see above). One pathway is the traditional Case report. We will help each student to select "an interesting imaging case" or "interesting disease (with typical or unusual imaging findings)", to prepare a CASE REPORT with brief REVIEW OF WORLD LITERATURE for "prelim" presentation at the beginning of the third week of the 4 week rotation. This will then allow fine tuning and preparation for final presentation to all radiology faculty and fellows during the fourth week (Students who plan an authorized absence or vacation at that time will be allowed to present earlier, or will be otherwise accommodated). Topics should be well researched and display specific imaging features. Alternatively, the student may wish to report on an interesting case. **We expect each CASE REPORT to be of sufficient quality that it can be submitted for e-publication.**

All Students who complete a rotation lasting four weeks are required to give multiple short presentations using Microsoft Office PowerPoint software (or equivalent). Please provide hand-outs of the presentation and include name, topic, date and picture on the first slide. This will allow for quick recall if future recognition is needed. A sample BLANK presentation or examples of excellent prior presentations can be made available upon request.

### **Method of Evaluation:**

- 1) Students will be evaluated based on criteria set forth on the "Standard Evaluation" forms as distributed by the Howard University College of Medicine.
- 2) **A written examination will be administered at the end of the rotation;**

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- 3) Each student is expected to pass the final RADIOLOGY EXAM WEB exam (see webstie)
- 4) Student must return textbook prior to receiving final evaluation.

**Professionalism:**

The student will function as part of the diagnostic radiology team in a professional manner, always respectful and compassionate with regards to patient's concerns when appropriate, regardless of the patients' culture, age, gender, and/or disability. Confidentiality of patient information is imperative.

NOT SHOWING UP FOR PLANNED EDUCATION ACTIVITIES, LIKE WEEKLY CONFERENCES, IS A SIGN OF LACK OF PROFESSIONAL BEHAVIOUR.

**Textbook:**

Herring, William, M.D. Learning Radiology: Recognizing the Basics - With STUDENT CONSULT Online Access (320 pages, 510 Illustrations; \*\$ 51.60 new, softcover). Philadelphia: Mosby Elsevier, May 2007 (first edition); April 2011 (Second edition).

Written by William Herring, MD, a seasoned radiology instructor and creator of an award-winning radiology teaching web site "Learning Radiology", efficiently presents just the radiology knowledge you need to know to get through clinical rotations and USMLEs. And, bonus online access via Student Consult where you will find the complete text of the book, self-assessment quizzes, and more makes this an even more effective learning tool!

\*Each student will be provided with a textbook at the beginning of the rotation, which must be returned upon completion of the elective.

**AWARDS for EXCELLENCE in LEARNING and/or CONTRIBUTING to RADIOLOGY as a MEDICAL STUDENTS:**

All senior students rotating through radiology can compete for one or more of the radiology awards listed below:

- *\*Dr. John W. Lawlah Award* - For outstanding performance in Diagnostic Radiology (\$250 and Certificate).

\* This award funded by the Radiology Department (\$250 per award; up to 2 awards per year).

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- Dr. Charles H. Kelley Award - For outstanding performance during the senior elective in Diagnostic Radiology (\$200 and Certificate).

\*This award is funded by the Kelley family (\$200 per award; up to 2 awards per year).

- The Duerinckx – Davis Award in Radiology Research and Education at Howard University College of Medicine- Awarded to the best Radiology Case Report submitted and accepted for publication by a Medical student (more details to be announced in 2009-2010).

More information about these awards can be obtained from the Medical Student Radiology Rotation Program Director.

**Updated on April 15, 2015.**

From: Andre J Duerinckx, MD-PhD, *Professor and Chairman of Radiology*

Bonnie Davis, MD, *Director of Medical Student Radiology Electives.*