**Ultrasound Basics:**
**Human Anatomy From a Different Perspective**
**Mini-Elective**

**FALL 2017**

- **Course Dates:** October 18, 25, November 1, 8
  Wednesdays, 5:00-6:30 pm
  (See location schedule on page 2)

- **Maximum Students:** 4 students per instructor per session

- **Class Year:** MS1

- **Course Director:** Marek A. Radomski, DO
  Assistant Professor of Emergency Medicine

- **Contact Information:** Marek A. Radomski, DO
  radomskima@upmc.edu
  412-864-2072

- **Registration:** Betsy Nero, Office of Medical Education
  betsy@medschool.pitt.edu

- **Description:**
  During this 4 session mini-elective, which is designed to run concurrently with the Medical Anatomy MS-1 course, students will learn about anatomy as they scan each other. This will be a hands-on course that will focus on the sonographic anatomy.

- **Requirements:**
  Actively participate in all four sessions.
COURSE OUTLINE
Ultrasound Basics: Human Anatomy From a Different Perspective

Course Director:
Marek A. Radomski, DO, Assistant Professor of Emergency Medicine

Contact Information:
Marek A. Radomski, DO, 412-864-2072, radomskima@upmc.edu

Location:
Students should meet in Lecture Room 2 at 5:00 pm for the didactic session and then will break into small group rooms for scanning—Rooms 460A&B, 464A&B, and 468A&B.

Session 1:
Students will become familiar with the ultrasound machine and to learn the basic principles of point-of-care ultrasonography.
- Define ultrasound
- Describe the ALARA principle as it relates to diagnostic imaging
- Demonstrate the basic functions of the ultrasound machine
- Describe how to select the proper transducer for the intended application
- Demonstrate how gain, frequency and depth affect image acquisition
- Understand and demonstrate transducer orientation with respect to the acquired image
- Understand and identify common ultrasound artifacts

Session 2:
Focus on the cardiovascular system (heart and major vessels).
- Understand the basic anatomy of the heart
- Obtain views of the heart
- Identify the pericardium, valves and the 4 chambers of the heart
- Demonstrate how to measure the LV posterior wall and aortic outflow tract
- Develop essential knowledge for performing a transthoracic echocardiogram
- Describe the anatomy of the abdominal aorta and its major branches

Session 3:
Examines the kidneys, ureters and bladder
- Obtain views of the kidneys
- Obtain views of the bladder
- Understand the relation of the bladder to the uterus and/or prostate
- Measure the bladder size and estimate the bladder volume
- Attempt to visualize ureteric jets using power Doppler

Session 4:
Will involve anatomic structures of the head and neck
- Obtain views of the thyroid
- Demonstrate the course of the IJV in relation to its adjacent structures
- Demonstrate how changes in IJV diameter occur with valsalva and body inclination
- Demonstrate the anterior and posterior chambers of the eye
- Identify the optic nerve sheath, retina and lens

Requirements: Actively participate in all 4 sessions