AbstractID: 8770 Title: A web based physics teaching file for radiology residents

Purpose: To describe a web-based digital teaching file of imaging physics for Radiology residents.

Method and Materials: The RSNA R&E Foundation supported the development of a web-based physics teaching file for Radiology residents. This RSNA Physics Teaching File was completed at the end of 2007 and is freely available to any computer with internet access. Modalities that employ x-rays in the image formation process are described, including radiography, mammography, fluoroscopy, angiography, and computed tomography. There are also sections on general characteristics of digital images and image processing, which has become ubiquitous in digital imaging.

Results: The website is hosted at SUNY Upstate Medical University and may be viewed at http://www.upstate.edu/radiology/rsna. Each section contains digital images generated with appropriate phantoms on the various modalities, as well as a selection of clinical images. Illustrated are important technical issues related to image quality (i.e. contrast, resolution, and noise) and how these are affected by parameters associated with image acquisition. Effect of changing tube voltage, tube current, field of view, image matrix size, and scatter reduction techniques are illustrated. Special sections were included to explain dual-energy imaging and other image processing techniques in radiography.

Conclusion: The teaching file web site is a valuable resource for teaching the physics of x-ray imaging to radiology residents.