AbstractID: 5975 Title: The Role of the Physicist in the Planning and Design of Digital Image Management Systems (PACS)

The classically trained medical physicist strives to yield maximum diagnostic information from an exam with minimal impact on patient health (i.e. by minimizing dose). This simple objective means that in practice the physicist must: become expert on following the latest technological developments across modalities to assist in equipment purchases, monitor and oversee the imaging protocols used at an institution, and monitor the equipment performance over its lifetime.

As the department transitions to filmless radiology, the mission remains the same, but the scope of implementation increases. The DICOM services that an imager supports are analogous to the filming options supported of yesteryear. The H&D curve of film days maps to the DQE and JND of today's detectors and displays. Quality Control encompasses not only median film density of a laser camera and MTF of a CT, but how those image properties propagate from acquisition to final display device. The key point to realize is the medical physicist is uniquely empowered to have a holistic systems view of the imagers, PACS, RIS and the needs to QC the entire chain.

In this lecture, we will discuss the value add that the medical physicist provides due to the unique collection of training and skills we possess.

Educational Objectives:

1. Compare and contrast the classic role of a medical physicist in the film based department verses the filmless radiology department
2. Identify the areas of technology and practice where the Medical Physicist adds value
3. Case studies of cost savings made possible by the practice knowledge that a medical physicist brings to the table that IT staff may not have