AbstractID: 7925 Title: Optimizing CT Image Protocols With Respect To Quality and Radiation Dose

CT technology continues to develop at a rapid pace, offering imaging options and features that can dramatically improve image quality. Multi-channel systems are now commonplace and the number of channels continues to increase, allowing greater coverage per rotation, shorter scan times, and thinner images. Isotropic volumetric data acquisition permits retrospective reconstructions of many different image thicknesses and reformats can be created through multiple planes. These and many other advances have escalated and expanded the utility of CT imaging as a core diagnostic tool.

However, coupled with the improved CT technology is the increased complexity of operating the scanners and the elevated potential of increasing the radiation dose. CT operators must choose from multiple options, many of which are interdependent, for the control of the multitude of available features. The impact of each of these options on image quality and radiation dose can range from subtle to substantial, and may not necessarily be obvious to the operator.

This lecture will focus on the clinical implications of CT scan parameters and provide guidance on achieving an optimal compromise between image quality and radiation dose when constructing CT scan protocols.

Educational Objectives:

1. Understand the influence of primary CT scan parameters on image quality and radiation dose.
2. Learn how to use imaging task-specific priorities with consideration for radiation dose when determining scanner settings.