

# Tailoring CT Protocol to Patient Age and Size with a Focus on Pediatric Patients

Introduction

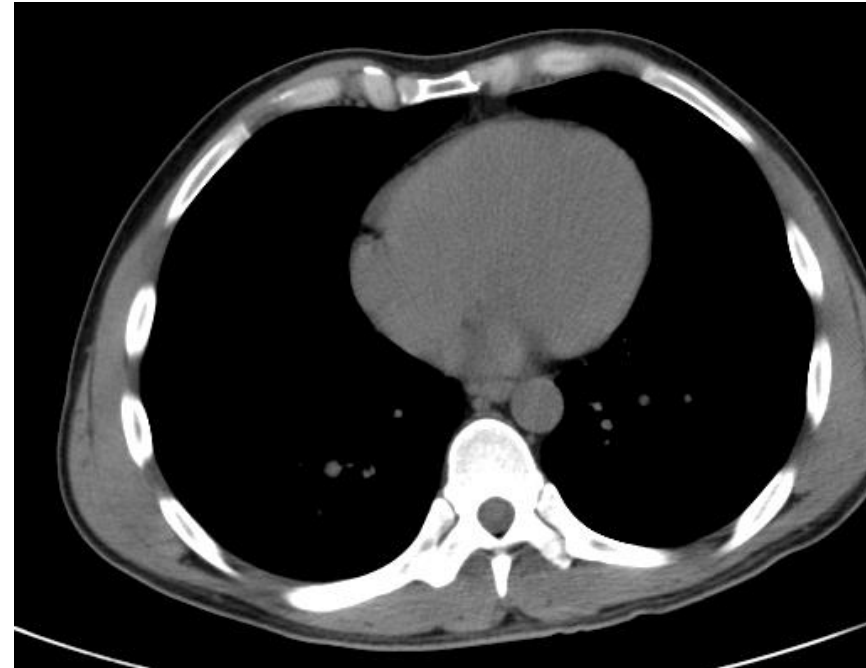
# Speakers

- Introduction
  - Donovan M. Bakalyar, PhD
- CT Protocol Optimization Over the Range of Patient Age & Size and for Different CT Scanner Types
  - Frank N. Ranallo, PhD
- Practical Considerations for Size Based Protocol Optimization
  - Zhihua Qi, PhD
- Meeting the Imaging Needs of the Pediatric Radiologist: The Effect of Patient Size, Age and Clinical Circumstance on Optimizing the CT Image
  - Kimberly E. Applegate, MD

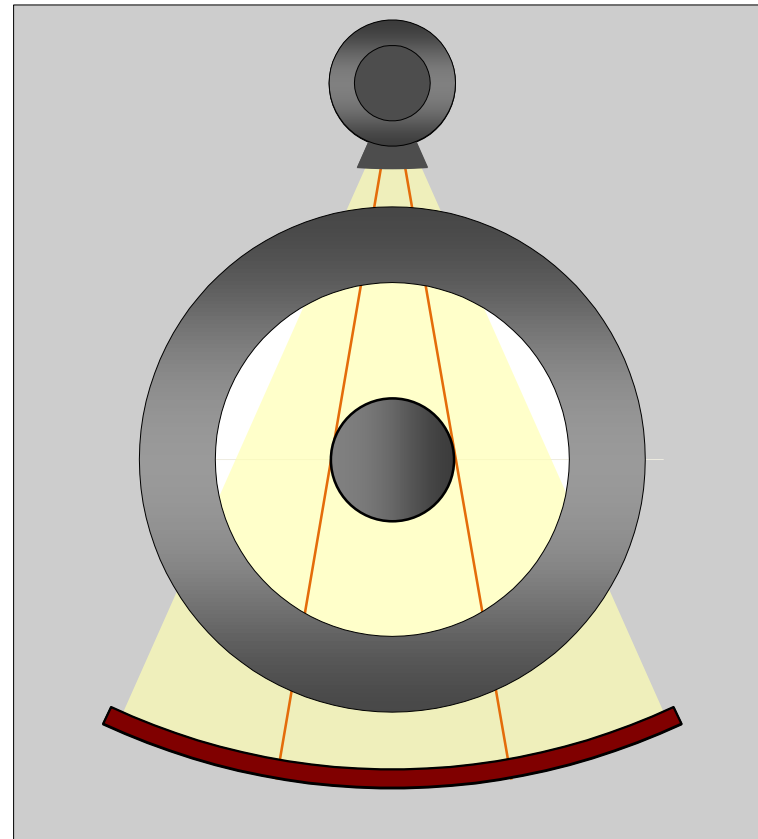
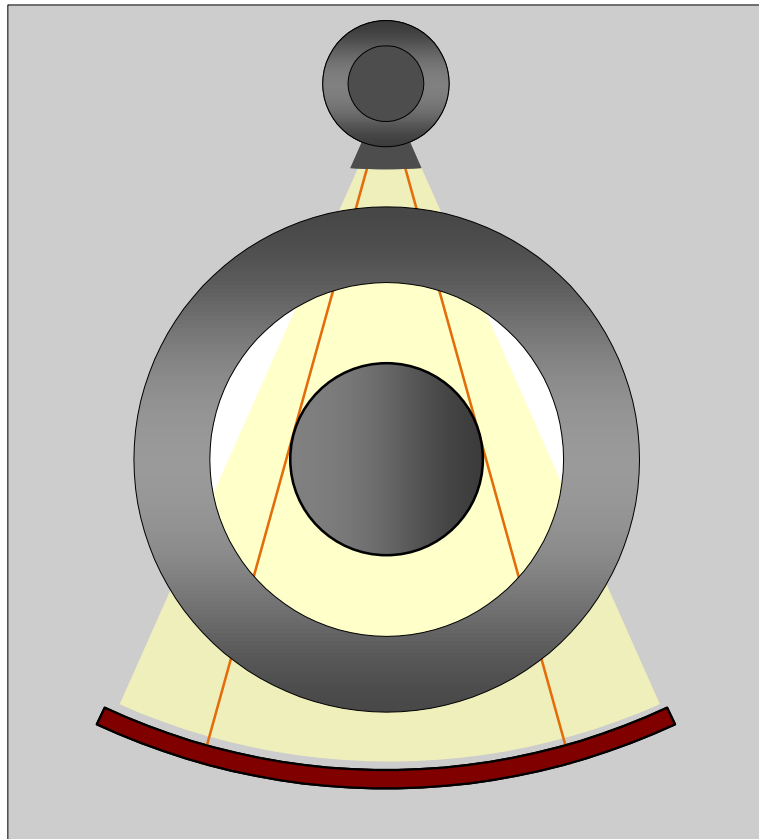
# Pediatrics: Is a child a small adult?



# Child and adult: Which is which?



# Magnification, FOV and noise: What needs to happen here? Scaling dose to size



# Based on size alone...

- for the same apparent noise, the dose to the detector must *increase* as the patient size *decreases*.
- for a smaller patient, due to less attenuation *less* patient dose is required to achieve the *same* dose to the detector
- These effects counter each other resulting in the recommendation of equating SSDE for patients of different size\*.

\*M. J. Goske, K. J. Strauss et al., "Diagnostic Reference Ranges for Pediatric Abdominal CT," Radiology 268(1), 208-218 (2013).

Thank you