**Presenter:** Eric Tamm  
**Title of Abstract:** Techniques to Optimize Radiologic Review of Dual Energy CT Studies  
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**Modality:** CT  
**Organ System:** Multi  

**Purpose:** Dual energy CT (DECT) studies generate multiple new types of imaging information. This exhibit will review an approach for utilizing radiology workstation tools for efficiently reviewing DECT imaging data, with examples drawn from oncology.  

**Content Organization:**  
1. **Introduction/Overview**  
   Brief introduction to dual energy CT (DECT). Will include brief definitions of monochromatic energy, material density, and other postprocessed images.  
2. **Monochromatic Imaging**  
   How to use contrast-to-noise curves to choose the appropriate monochromatic energy images to maximize contrast between target lesions and background tissues. How changing monochromatic energies impacts contrast and noise.  
3. **Material Density Images**  
   How iodine(water) material density images improve visualization of differences in enhancement to improve lesion conspicuity. Creating virtual noncontrast images and their limitations. Importing NIST definitions for other materials into workstation software. Using other material density images, such as iodine(calcium) to remove calcified plaques from vessels.  
4. **Postprocessing**  
   Will cover such topics as the definition of the virtual atomic number, and its utility.  
5. **Use of Novel Display Techniques**  
   When to use various graphs and charts, including Spectral Hounsfield Unit Curves, GSI Scatter Plots, and Histograms to discriminate between different tissues. Will also review the utility of overlays and color maps to enhance the conspicuity of features such as enhancement and subtle internal tumor features.  
6. **Optimizing Workflow**  
   How best to utilize PACs software and thin client dual energy CT workstation software.  
7. **Conclusion**  
8. **References**  

**Major Teaching Points**  
1. How to choose the most useful monochromatic energy images.  
2. How to create material density images and effectively use them.  
3. How to choose between a variety of novel techniques to display DECT imaging data.