Medical Physics Seminar

Monday, April 25th, 2016

1345 HSLC ~ 4:00 P.M.

DEPARTMENT OF Medical Physics
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

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Methods for Identification and Quantification of Bone Disease Using PET/CT Images

Current methods for assessing bone disease do not fully characterize disease because they look at only small regions of the disease or a few bone lesions as it is impractical to manually analyze the whole disease burden. These methods fail to account for the heterogeneity of disease throughout the skeleton, which shows a need for automated methods for comprehensive analysis. This seminar will focus on some of our work in automated analysis of 18F Sodium Fluoride PET/CT images. Current methods of automated lesion detection employ a whole body SUV threshold, which has been shown to either exclude certain lesions or include background bone uptake. This seminar will cover our development of a bone-specific variable SUV thresholding method for locating disease that optimizes the balance between the exclusion of background uptake and detection of bone lesions. Additionally, we have developed a radiomics-based machine learning classification algorithm for differentiating between benign and malignant bone lesions, which is a process that previously required manual physician classification.

Brandon Walker

Research Assistant, Student of Dr. Rock Mackie

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Modular Multi-Source X-Ray Tube for Computed Tomography Applications

No abstract given.

1345 Health Sciences Learning Center (HSLC) 4:00 - 5:00 P.M.