Department of Radiological Sciences

RESEARCH SEMINAR SERIES

Breast CT: Technology Development and Comparative Performance of Computer Observer and Human Observer Studies

September 30, 2015 12:00—1:00 Noon

Telecast: UC Irvine Douglas Hospital Radiology Conference Room 0117
Live: UC Irvine Campus Medical Education Building, Colloquium 3070

NOTE: Guest Speaker will be in Medical Education Colloquium 3070. Videocast will be in UCIMC Radiology Conference Room, Douglas Hospital Room 0117

Abstract:

Despite the success of mammography at reducing breast cancer mortality in the United States over the past three decades, the breast imaging community recognizes that mammography has reduced sensitivity in women with dense breasts. Dedicated breast computed tomography (breast CT) has the potential of increasing the sensitivity in the dense breast by reducing the anatomical complexity in the images. Four different breast CT scanner models have been developed at UC Davis, and have been tested on women in research clinical trials. This presentation will discuss some of the technical development issues associated with these four scanners, and the improvement in spatial resolution that has resulted. A series of investigations have focused on observer performance, using both computer models and human observers. The results of these clinical studies, which compare breast CT with projection mammography, will also be discussed. Overall, both computer observer and human observer studies on mass lesions (not microcalcifications) have demonstrated superior performance of breast CT over planar projection imaging of the breast.

John M. Boone, Ph.D.
Professor and Vice Chair (for Research) of Radiology at UC Davis
Professor of Biomedical Engineering

About the Presenter:

Dr. John M. Boone received his undergraduate degree in biophysics from the University of California Berkeley, and went on to receive his M.S. and Ph.D. degrees in Radiological Sciences at the University of California Irvine. Prior to his appointment at UC Davis, he served in faculty positions at the University of Missouri Columbia and at Thomas Jefferson University (Philadelphia). Dr. Boone is the principal investigator of the Breast Tomography Project at UC Davis, and has developed breast CT technology over the past 15 years, with over 600 women imaged on his four breast CT scanners. In addition to breast CT, Dr. Boone has published widely on issues pertaining to radiation dose in whole body computed tomography, image quality assessment, and computer modeling studies. Dr. Boone is a fellow of the AAPM, the Society of Breast Imaging, and the American College of Radiology. He is the current (2015) president of the American Association of Physicists in Medicine (AAPM).

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