



Medical Physics Seminar

Monday, October 17, 2016

1345 HSLC — 4:00 PM



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Quantitative MRI for Precision Medicine

The ability of MRI to measure real, physical parameters of interest requires reference standards to ensure accuracy and reproducibility of data. Currently, variability exists across MRI systems, manufacturers, models, software versions, and analysis packages, which impedes comparison of data across centers. To move towards precision medicine, we must be able to compare data across centers whether for the care of an individual patient or for a research study determining the efficacy of a new treatment. The National Institute of Standards and Technology (NIST), in conjunction with professional societies, has developed a suite of physical reference objects, known as phantoms, to serve as standards. These phantoms provide valuable information regarding biomarker measurement reproducibility, as well as allowing for calibration and validation of specific techniques in MRI. By integrating the phantoms into medical practice alongside recommended imaging protocols, the reproducibility of quantitative imaging biomarkers will improve, enhancing the clinical utility and cost effectiveness of imaging, leading to a better standard of care for patients. In this talk, I will discuss applications of MR phantoms in breast MRI, homogenization of brain imaging for Alzheimer's research, validation of MR fingerprinting, and use in quantitative diffusion imaging for traumatic brain injury assessment.

1345 Health Sciences Learning Center (HSLC) - 4:00pm to 5:00pm

