Medical Physics Seminar

Monday, November 16, 2015

1345 HSLC ~ 4:00 P.M.

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Chair and Professor
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Quantitative Imaging Initiatives: What, Why, Who, and How?

Over the past decade, there has been an increasing focus on quantitative imaging biomarkers (QIBs). To evolve from qualitative imaging assessments to the use of QIBs requires the development and standardization of data acquisition, data analysis, and data display techniques, as well as appropriate reporting structures. As such, successful implementation of QIB applications relies heavily on expertise from the fields of medical physics, radiology, statistics, and informatics as well as collaboration from vendors of imaging acquisition, analysis, and reporting systems. When successfully implemented, QIBs will provide image-derived metrics with known bias and variance that can be validated with anatomically and physiologically relevant measures, including treatment response (and the heterogeneity of that response) and outcome. Such non-invasive quantitative measures can then be used effectively in clinical and translational research and will contribute significantly to the goals of precision medicine. This presentation will focus on 1) overviewing the potential for QIB applications, 2) discussing key challenges in the implementation of QIB applications, and 3) providing overviews of efforts to address such challenges from federal, scientific, and professional organizations, including, but not limited to, the RSNA, ESR, NCI, FDA, and NIST.

1345 HEALTH SCIENCES LEARNING CENTER ~ 4:00 to 5:00 P.M.