AbstractID: 7937 Title: Current NIH and NCI Initiatives Using Imaging Biomarkers

Imaging as a biomarker for drug response is becoming an increasing important area of research. There are many sources of uncertainty in the use of imaging as a biomarker for the assessment of drug response. For example, biological variability is a factor that is drug, organ, tumor and patient dependent and thus best addressed through carefully designed clinical trials such as those proposed using and NCI and an NIH wide biomarker initiatives. *http://www.fda.gov/oc/mous/domestic/FDA-NCI-CMS.htm).*

http://www.fnih.org/Biomarkers%20Consortium/Biomarkers_home.shtml

However there is also measurement variability associated with the imaging data collection and analysis across different commercial platforms and uncertainty in the performance of different software tools employed to measure therapy response, such as the measurement of change in image-related computer extracted features over time. These hardware and software sources of uncertainty often force an increase in the size of clinical drug trials, and ideally should not be a variable in measurement of drug response. The development of standardized methods to physically characterize these sources of uncertainty would stimulate the development of improved imaging methods and software tools as recommended by a recent Trans Agency Workshop organized by NIST: http://usms.nist.gov/workshops/bioimaging.htm

This presentation will review current and potential funding opportunities for medical physicists to become engaged in the development of imaging systems and methods and related imaging standards that have the potential of being used in imaging trials for drug and therapy response.