

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Absorption and Agglomeration of Gold Nanoparticles as a means to Probe Cell Metabolic Activity for Radiotherapy Applications** ADAM STEFANKIEWICZ, FRANK HOLDER, TABBETHA DOBBINS, Rowan University — Polylactic-co-glycolic acid (PLGA) surface treatment of gold nanoparticles (AuNPs) enable those particles to cross the cellular wall. Once within the cell, absorption spectral shifts, predicted by the Mie Theory equation, occur because the dielectric constant of the matrix differs from that surrounding the cell. This phenomena will lead to particle agglomeration (due to changes in surface energy of the particles) and shifts in the Mie absorption spectra. Both phenomena are being explored in fibroblast cells as a means to track cell type and cellular metabolic activity. UV-Vis spectrophotometry and scanning electron microscopy (SEM) are incorporated to analyze the resulting particle/cell mixtures. Early results will be presented.

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Date submitted: 14 Nov 2011

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