Abstract Submitted
for the SES13 Meeting of
The American Physical Society

Computer Simulations for Understanding Dose Enhancement Through Microdosimetry NICOLE ACKERMAN, Agnes Scott College — Dose enhanced radiotherapy uses high atomic number materials, such as iodine and gold, to increase local dose from radiation, such as X-rays. The efficacy of this technique has been demonstrated in many systems, but results have not been consistent. I will present a detailed simulation method for measuring dose enhancement from physical models. Using Geant4, I am able to explore the underlying physics, such the role of low energy electrons and differences in beam energy. I combine Geant4 with a double strand break model, which predicts additional enhancement for low beam energies. This work furthers our understanding of how to measure and simulate dose enhancement, working toward optimized drugs for clinical treatment.

Nicole Ackerman
Agnes Scott College

Date submitted: 20 Sep 2013 Electronic form version 1.4