Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Substrate Induced Osteoblast-Like Differentiation of Stromal Stem Cells JACQUELINE BELIZAR, Miller Place High School, REENA GLASER, MATTHEW HUNG, Smithtown High School West, MARCIA SIMON, VLADIMIR JURUKOVSKI, MIRIAM RAFAILOVICH, Stony Brook University, ALICE SHIH — We have demonstrated that Adipose-derived stem cells (ASCs) can be induced to biomineralize on a polybutadiene (PB) coated Si substrate. The cells began to generate calcium phosphate deposits after a five-day incubation period in the absence of dexamethasone. Control cells plated on tissue culture PS culture dish (TCP) did not biomineralize. In addition, the biomineralizing culture retained proliferative cells In order to determine whether the induction was transient, we transferred the cells exposed to polybutadiene after 14 and 28-day incubation periods to TCP dishes. These cells continued to biominerlize. Genetic testing is underway which will determine whether differentiation is maintained after transfer.

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Date submitted: 17 Dec 2008 Electronic form version 1.4