1086-34-99 **Robert R Ferdinand*** (rferdand@ecok.edu), **Jayson Bucy** (rferdand@ecok.edu), **Jeff Spears** (rferdand@ecok.edu), **Tomas Tillery** (rferdand@ecok.edu) and **Nick Nottingham** (rferdand@ecok.edu). *M.I.T.C.H - Medicinal Interaction 'Twixt' Cancer and Healthy Cells.*

A nonlinear, coupled system of three ordinary differential equations is presented. This system models the dynamics among healthy cells, cancer (tumor) cells and medicine in a living organism. Equilibrium points of this system are calculated and stability/non-stability criteria for the same are established. Results are illustrated graphically. *Mathematica software is used extensively in obtaining analytical and graphical results.* *Note: This research was conducted among a mathematics faculty and four undergraduate mathematics majors. It was funded by a Center for Undergraduate Research in Mathematics (CURM) mini-grant from NSF and BYU. (Received July 19, 2012)*