Luke R Anderson* (luke.r.anderson@ttu.edu), 4432 Haner Dr, Odessa, TX 79762. Modeling tumor-CD4+-Cytokine Interactions with Treatment.

Many cancerous tumors produce recognizable antigens which can incur an antitumor response from an adaptive immune system. Until recently, most cancer immunotherapy studies have focused on the CD8+ CTLs that recognize MHC class I molecules and their antigens on tumor cells. Recent studies have shown that cancer cells are beginning to evolve and avoid recognition by CD8+ CTLs. Because of this evolution; focus has begun to shift to CD4+ T cells. Recent studies show that CD4+ Th1 and Th2 cells can act independently of CD8+ CTLs to eradicate tumor cells. A set of three equations were constructed to model the relationship between cancer cells, CD4+ T cells, and two important cytokines (IL-4 and Th2). It has been found that without treatment even a small tumor cannot be eliminated. However, with cytokine treatment it may be possible to shrink, stabilize, or eliminate a tumor depending on its antigenicity. (Received February 06, 2014)