

1116-VM-1701      **Bryan A Dawkins\*** (bdawkins@uco.edu) and **Sean M Lavery**. *Modeling Effects of Regulatory T Cells in Antitumor Laser Immunotherapy.*

Antitumor laser immunotherapy is a promising approach for completely eradicating primary and metastatic tumors. We present a mathematical model consisting of a system of first order, ordinary differential equations that explicitly includes populations of dendritic cells, cytotoxic T cells, primary tumor cells, and metastatic tumor cells. One of the primary obstacles to achieving the desired clinical outcome for immunotherapy of cancerous tumors is the suppressive activity of regulatory T cells (Tregs) as a result of self-tolerance. We present our analysis of the effects of Tregs by considering simulated treatment outcome as a function of Treg immunosuppressive activity. Using model results, we outline a systematic method for assigning a patient's clinical outcome for a simulated treatment. Ultimately this will show how modulation of immunosuppressive Treg activity during laser immunotherapy determines clinical outcomes in treated patients. (Received September 21, 2015)