

1096-VG-1962 **Bryan Alexander Dawkins*** (bdawkins@uco.edu) and **Sean Michael Laverty**
(slaverty@uco.edu). *A Mathematical Model of Laser-Initiated Immunotherapy of Cancer.*

We will present a mathematical model composed of a system of ordinary differential equations describing the treatment dynamics of cancer cell populations with exponential growth. The model will include laser-initiated cancer destruction by means of several classes of immune cells. We will show successful treatment and the conditions under which this may occur. Also, we will describe conditions under which failed treatment may occur. To expand the model, treatment of cancer cell populations with non-exponential growth will be discussed as well. We will show that the ultimate success of laser immunotherapy of cancer is highly related to immunoadjuvants represented by parameters of our model. (Received September 16, 2013)