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This talk will consider some applications of data assimilation on models of tumor growth and treatment. The ensemble Kalman filter and its variants provide a computationally efficient way to estimate initial conditions and parameters and their associated uncertainties in dynamical systems. Questions of identifiability and bias in the model variables also can be addressed. These concepts will be illustrated using clinical trial data with a differential equation model of prostate cancer growth and treatment. (Received September 22, 2015)