1116-VM-2563   **Zachary Dean Kenyon*** (`zkenyon@asu.edu`), 1900 E Apache Boulevard, Apt 4040, Tempe, AZ 85281. *Uncertainty Quantification in Model of Treatment for Metastatic Prostate Cancer.* Preliminary report.

The Intermittent Androgen Suppression (IAS) treatment system from prostate cancer puts patients through on and off drug treatment cycles. When the patient is on their medication, their androgen and prostate specific androgen (PSA) levels decrease. Our objective is to use a method in the vein of weather forecasting to predict a patients response to the treatment: given data up to time tn, what will the PSA levels be at tn+1? The model developed by Portz et al. (2012), adequately represents the patient's PSA after going through the treatment cycles. Combining the Portz model with Local Ensemble Forecasting via Kalman Filtering, our objective is to predict a patient's PSA during off-treatment cycles. This would allow for updates with the inclusion of every new data point collected and ultimately, it would give doctors a tool to estimate the duration of the patient's off-treatment phases. (Received September 22, 2015)