**Objectives:**
Evaluation of the dosimetric differences of an Intensity Modulated Proton Therapy (IMPT) plan relative to 2 types of Intensity Modulated Radiation Therapy (IMRT) for target and normal tissue organs at risk (OAR).

**Methods:**
We compiled the treatment planning for IMPT and then performed Volumetric Arc Therapy (VMAT) and Helical Radiation Therapy/Tomotherapy (HRT) planning on 15 post radical prostatectomy patients treated at our institution with IMPT to 70.2 Gy(RBE) to the prostate and seminal vesicle surgical bed. Daily prostate immobilization was achieved by utilizing a rectal balloon inflated to a customized amount based upon individual anatomy. The RTOG contouring atlas was utilized for target and OAR delineation. Contours were performed by multiple physicians but reviewed and adjusted/finalized by one physician reviewer. Planning target volume (PTV) expansions on the clinical target volume (CTV) were per our institutional guidelines for IMPT and IMRT, respectively. Goals of treatment planned on listed on Table 1. Dose volume histograms (DVH) were compared between IMPT and IMRT plans with a one-tailed T-Test. The differences were considered statistically significant with a p-value of 0.001 given the repetitive analysis of OARs.

**Results:**
The 98% PTV coverage (table 1) was statistically similar with all three modalities, although the mean dose to 95% of the PTV was a bit higher in the IMRT plans [70.6-70.8 Gy(RBE)] over the IMPT plan [70.2 Gy(RBE)]. There was also no difference in the penile bulb, femoral heads, or bowel cavity DVHs. Nearly all the bladder and rectal along with sigmoid colon DVHs are improved with IMPT over IMRT (table 1).

**Conclusion:**
IMPT seems to have a dosimetric advantage over IMRT in several categories for the bowel and bladder. There is also the added advantage of lower integral radiation dose. Given the data from MGH (Gray et al 2013) and SEER (abstract PTCOG NA 2017), we have reason to hope that less GI and GU toxicities along with decreased secondary neoplasm rate will be demonstrated with IMPT for prostate cancer. We continue to gather the data from our patients to demonstrate whether this will translate into a true clinical advantage.