

# Knowledge-Based Treatment Planning Increases Complexity and Reduces Delivery Accuracy of VMAT Plans for Prostate Cancer



Authors: Phillip Wall (presenting), Jonas Fontenot  
 Session: Knowledge-Based Treatment Planning  
 Date & Time: 08/01/2018; 10:15AM – 12:15PM

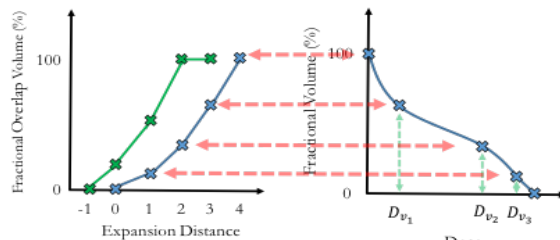
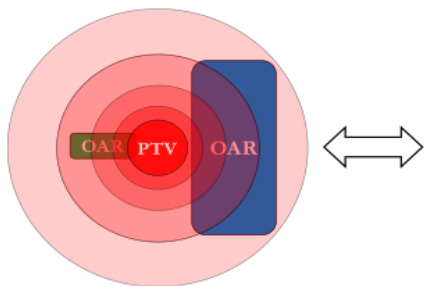


## METHODS

Knowledge-Based Planning (KBP):

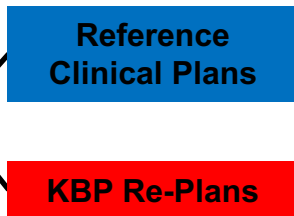
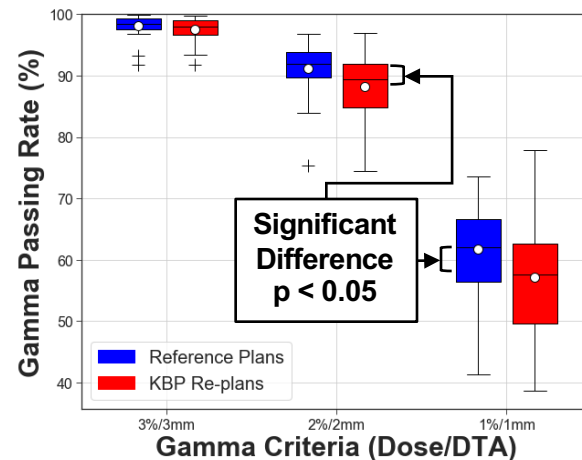
- Use previous plan data to guide planning new patients with similar anatomies

Overlap Volume Histograms → DVH Predictions



## RESULTS

	Reference Plans ( $\mu \pm \sigma$ )	KBP Re-plans ( $\mu \pm \sigma$ )	<i>p</i> -value
<b>MU</b>	460 ± 129	562 ± 117	< 0.001
<b>MCS</b>	0.49 ± 0.09	0.42 ± 0.06	< 0.001



**Complexity:**

- Monitor Units
- Modulation Complexity Score (MCS)

**Delivery Accuracy:**

- Elekta Versa HD
- MapCHECK2
- Gamma Analysis