

## AbstractID: 8215 Title: A graphical user interface for virtual fluoroscopy to aid in prostate seed implant verification

**Purpose:** To create a graphical user interface (GUI) to generate a virtual fluoroscopy image to be used as a guide during prostate seed implants.

**Method and Materials:** Seed position information is extracted from the SPOT-PRO™ treatment planning system and used as source data for a Matlab algorithm that performs ray tracing to generate a virtual fluoroscopy image. This image is displayed on a GUI with controls that allows users to slightly alter the seed distribution to account for small differences in patient positioning from the time of pre-planning and the actual implant procedure.

**Results:** The GUI allows the user to pan, rotate or zoom the calculated seed distribution to adequately model the setup on the day of the implant.

**Conclusion:** This main purpose of this project was to provide a virtual image that can be used to guide the physician during prostate seed implant. Due to slight changes between the patient setup during the initial volume study and on the day of the implant, the user is allowed to make slight geometrical changes to the distribution. While this first version of the GUI uses a generic image of the pelvis as background, there is the possibility of using an image taken before the start of the procedure. This may provide better visual clues to the physician to compare seed positions. The fast calculation times would also allow for the creation of the images for different numbers of needles so that the physician can have an ongoing assessment of how the actual implant differs from the planned one.