AbstractID: 9773 Title: Spatio-temporal amplification of radiation response project

Translational research in radiation oncology has been in some ways limited by the lack of small animal model systems of common clinical issues. New technology, required to deliver ‘clinically equivalent’ radiation at small animal scale, has been developed to compliment existing small animal imaging systems. In support of such activities, two image-guided small animal irradiation systems have been developed at Princess Margaret Hospital. Both use a 225 kVp x-ray tube for treatment and include cone-beam CT capabilities. Work is underway to refine hardware (collimation and animal immobilization) and software (image registration and dose calculation) systems. Multiple experimental models are being developed to exploit these novel technologies including exploration of tumor control and normal tissue toxicity in lung, brain, and other sites.