



Jewish General Hospital  
Lady Davis Institute for Medical Research



## ***"egs\_brachy and the CLRP Monte Carlo TG-43 Parameter Database"***

**Marc Chamberland**

Medical Physicist  
University of Vermont Medical Center  
Burlington, Vermont

### **Abstract**

egs\_brachy is an EGSnrc-based Monte Carlo application designed specifically for brachytherapy simulations. This talk gives an overview of the application and its built-in efficiency-enhancing features. A number of scenarios are presented to characterize the efficiency gains and optimal strategies. In addition, egs\_brachy has been used to update the Carleton Laboratory for Radiotherapy Physics (CLRP) Monte Carlo TG-43 Parameter Database. The updated database provides detailed models and full sets of TG-43 parameters data for 73 brachytherapy sources. All source models have been validated against published literature. Challenges in updating the database, including the effects of electron transport in high-energy sources, will be discussed.