Abstract ID: 17172 Title: Educational Course TherapyLate Effects from Radiation Therapy, Second Cancers and Cardiac Toxicity

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Long-term survivors of radiation therapy have an increased risk of developing second cancers, cardiovascular disease, and many other late effects. Population-based epidemiological studies have established risk models to quantify the relationship between excess risk and radiation dose. The quantification of radiation-related late effects and the use of modern delivery techniques to reduce such effects is an important and growing area of research in medical physics.

Currently, in the United States there are more than ten million cancer survivors and this number is rapidly increasing due to improved treatments, more frequent screening, and greater life expectancy. As the population of survivors increases so too does the need to minimize the likelihood of cancer therapy related late effects and specifically those related to radiation therapy. This continuing education session will focus on the two most commonly reported late effects from radiation therapy, second cancers and cardiac toxicity.

This session will provide an overview of the dosimetric techniques currently used in late effects studies, dose response models, and how data in the literature can be translated into clinical practice (now and in the future). The specific learning objectives for this session include:

1. To provide a general overview of the methods used in epidemiological studies of radiation-related late effects.
2. To present an overview of the current knowledge on radiation-related cardiac toxicity.
3. To present an overview of the current knowledge on radiation-related second cancers.
4. To improve understanding of the results of late effects studies and their effect on the future practice of medical physics.