



SCHOOL

Course report

Basic Clinical Radiobiology

4 - 8 September 2021, online

Course director:

Michael Joiner, radiation biologist, Wayne State University, Detroit, USA

Could you please briefly introduce yourself?

My name is Paul Doolan. I am a medical physicist with over a decade of clinical and research experience in radiation oncology. After working as a medical physicist in the UK, I completed a PhD in medical physics at University College London and spent a year-long sabbatical at Massachusetts General Hospital and Harvard Medical School. I joined the German Oncology Center in Cyprus at the start of its operation in 2017 and assumed responsibility for the medical physics department as the general co-ordinator in 2020.

Why did you choose to attend this course?

This course was attractive as it gave me the opportunity to refresh my knowledge in radiobiology. As a centre we regularly offer retreatments, deliver treatments with alternative fractionation schemes and deliver combined external beam radiation therapy and high-dose-rate brachy radiotherapy treatments. As I am the chief medical physicist in my centre, it is vitally important that I have a firm grasp of the techniques that are used to assess equivalent 2Gy per fraction doses and am able to provide the radiation oncologists with accurate estimates of target and organ-at-risk (OAR) doses.

What aspects of the course were the most interesting and why?

The most interesting aspects of the course were the clinical examples provided by Professor Joiner. These were not only explained with fantastic detail, making them easy to follow and accessible, but were very applicable to daily practice. I could apply the exact examples to situations in my clinic. In this sense the course met, and exceeded, my expectations as it improved my knowledge and skills in the subject and gave me examples to follow in the future.

List three important 'takeaways' following the course.

Three 'takeaways' from the course would be:

- I. if a patient misses a fraction mid-way through their treatment, try to deliver this fraction within the original period of treatment and do not extend their overall treatment time;
- II. tissues with a low alpha/beta value have a more curved survival curve;
- III. delivery of treatments using lower linear energy transfer radiation leads to a more curved survival curve.

How would you encourage someone who has never been to a course run by the European Society for Radiotherapy and Oncology (ESTRO) to join this course next year/ in two years?

I would highly recommend the course to any physicists in radiation oncology who regularly have to perform equivalent 2Gy dose calculations as part of the planning process. As higher dose per fraction schemes and retreatments become more common, physicists must possess this critical skill. Having confidence in this procedure not only ensures that treatment plans do not have to be adjusted at plan review with the radiation oncologist, but it also ensures that the patient does not receive OAR doses higher than their tolerance.



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