

**Anne and Donald Herbert  
Distinguished Lectureship in Modern  
Statistical Modeling: Introduction**

Joe Deasy, PhD  
Department of Medical Physics



Memorial Sloan Kettering  
Cancer Center.

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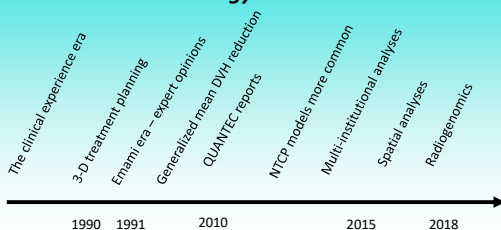
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**Predicting dose-volume related complications in  
radiation oncology: where are we at?**




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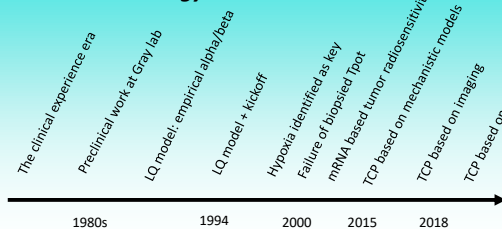
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**Predicting tumor control probability in radiation  
oncology: where are we at?**




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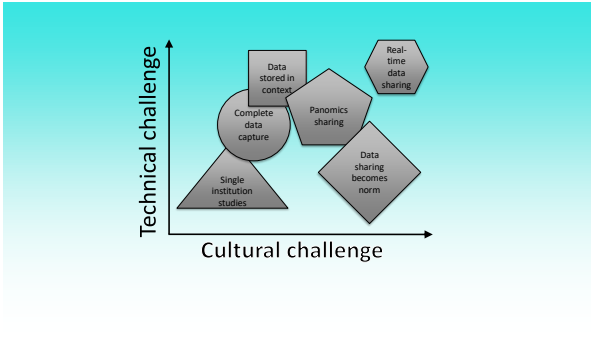
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### The Past:

Outcomes = physics or biology

Outcomes determined by physics:  
prescription dose, normal tissue volume effects

Outcomes determined by clinical radiobiology factors: stage, grade, fractionation, hypoxia, radiosensitivity, proliferation

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### “The Present”: Image-based outcomes analyses

Treatment plan archives

Statistical model building

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