

Visualization and quantification of tumour biology for personalized radiotherapy

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Propositions belonging to the thesis

Visualization and quantification of tumour biology for personalized radiotherapy

Aniek Even

1. Preselection of patients is a necessity for targeted treatments that might be too expensive or too complex to prescribe without knowing the efficacy in the individual patient. — *this thesis*
2. ^{89}Zr -cetuximab PET imaging shows a large interpatient variety in locally advanced head and neck squamous cell carcinomas and provides additional information over FDG PET and EGFR expression. — *this thesis*
3. Tumour hypoxia assessed with HX4 PET is a prognostic biomarker for survival. — *this thesis*
4. Identifying therapy resistant subvolumes will give greater insight into the underlying biological processes that adversely affect patient outcome and will propel development of personalized therapies. — *this thesis*
5. Combining multiple imaging data sets will become proportionally important with the increasing amount of data available. — *valorization of this thesis*
6. The more precise radiation delivery becomes, the more important it is to accurately define the primary tumour and regional metastases for treatment planning. — *Baumann et al. 2016*
7. Imaging biomarkers have enormous potential to facilitate further advances in cancer research and oncology practice by accurately informing clinical decision-making, but must undergo rigorous scrutiny through validation and qualification to achieve this end. — *O'Connor et al. 2017*
8. In physics, you don't have to go around making trouble for yourself — nature does it for you. — *Frank Wilczek*
9. You never know what worse luck your bad luck has saved you from. — *Cormac McCarthy*
10. Your assumptions are your windows on the world. Scrub them off every once in a while or the light won't come in. — *Alan Alda*