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## Overview

Professor of Radiotherapy Physics. This is a joint post between the University of Manchester and the Christie. Marcel is responsible for developing a programme of international leading radiotherapy physics research and innovation to deliver direct patient benefits. The main focus is on accuracy of radiotherapy including target volume definition, treatment planning, image guidance and treatment follow-up.  
Work Stream 4 for NCRI Clinical and Translational Radiotherapy Research (CTRad) Working Group

## Employment

### Chair in Radiotherapy Physics

Academic (Teaching & Research) Professor  
Division of Cancer Sciences (L5)  
The University of Manchester  
1 Aug 2016 → present

## Research outputs

### MR guided uncertainty quantification of tumour motion in open face masks versus closed face masks in head and neck radiotherapy

Tallon, J., Nelder, C., Dobby, B., Greenwood-Wilson, A., Bailey, R., Dubec, M., McPartlin, A., Gaffney, J., van Herk, M., Choudhury, A. & Eccles, C. L., 1 May 2026, In: Journal of Medical Imaging and Radiation Sciences. 57, 3, 7 p., 102196.

### The concept of virtual clinical trials: A game changer in radiation oncology research?

Faivre-Finn, C., Baker, C., Dempsey, C., Fisher, J., Frangi, A. F., Gosling, A., Hiley, C., Lowe, M., Marchant, T., McWilliam, A., Price, G., Rieu, R., van Herk, M., Vasquez Osorio, E., Woolf, D. & Aznar, M., Jan 2026, In: Radiotherapy and Oncology. 214, 111264.

### A case report of continuous glucose monitoring for a radiographer working in a 1.5T MR Linac

Dobby, B., Nelder, C., Tallon, J., McDaid, L., van Herk, M., Daly, M. & Eccles, C. L., 1 Dec 2025, In: Journal of Medical Imaging and Radiation Sciences. 56, 6, 6 p., 102063.

### Individualised dose mapping uncertainty estimation in the reirradiation setting

Thiong'o, C. M., Van Herk, M., Banfill, K., Banfill, K., Harris, C., Lowe, M., Marchant, T., Mohamed, I., Motamedi-Ghahfarokhi, G., Thomson, D., Appelt, A. L. & Vasquez Osorio, E., 28 Nov 2025, (Accepted/In press) In: Physics and Imaging in Radiation Oncology.

### Integration of Dose Surface Maps and Genetic Data Identifies the Lower Posterior Rectum as a Key Region for Toxicity after Prostate Cancer Radiotherapy

Bouzaki, A., Vasquez Osorio, E., Kerns, S., Van Herk, M., Morris, A., Shortall, J., Azria, D., Farcy-Jacquet, M. P., Chang-Claude, J., Choudhury, A., Dunning, A., Lambrecht, M., Avuzzi, B., de Ruyscher, D., Seibold, P., Sperk, E., Talbot, C., Vega, A., Veldeman, L. & Webb, A. & 5 others, Rosenstein, B., West, C., Rancati, T., Gioscio, E. & McWilliam, A., 17 Oct 2025, In: Clinical Cancer Research. p. OF1-OF9

### Multi-institution longitudinal apparent diffusion coefficient measurements in a diffusion weighted imaging phantom at room temperature

Moore, C., Darekar, A., Goodall, A., Manoharan, P., Hoskin, P., van Herk, M., McHugh, D. J., Datta, A. & Dubec, M. J., Jul 2025, In: Physics and Imaging in Radiation Oncology. 35, p. 100814

**The value of post radiotherapy prostate specific antigen dynamics for prostate cancer risk stratification models**

Shortall, J., Vasquez Osorio, E., Green, A., Reeves, K., Wong, D., Puri, T., Hoskin, P., Choudhury, A., Van Herk, M. & McWilliam, A., 18 May 2025, (E-pub ahead of print) In: Physics and Imaging in Radiation Oncology. 34, 100787.

**Cone-beam computed tomography reconstruction for a commercial proton beam therapy system**

Lindsay, J., Meara, S., Clarke, M., Lowe, M., Lines, D., Aznar, M. & Van Herk, M., 13 Mar 2025, (E-pub ahead of print) In: Physics and Imaging in Radiation Oncology. 100745.

**New rectum dose surface mapping methodology to identify rectal subregions associated with toxicities following prostate cancer radiotherapy**

Bouzaki, A., Green, D., van Herk, M., Shortall, J., Puri, T., Kerns, S., Azria, D., Farcy-Jacquet, M. P., Chang-Claude, J., Choudhury, A., Dunning, A., Lambrecht, M., Avuzzi, B., Ruyscher, D. D., Seibold, P., Sperk, E., Talbot, C., Vega, A., Veldeman, L. & Webb, A. & 6 others, Rosenstein, B., West, C. M., Gioscio, E., Rancati, T., Osorio, E. V. & McWilliam, A., 20 Jan 2025, In: Physics and Imaging in Radiation Oncology. 33, 100701.

**Translation of dynamic contrast-enhanced imaging onto a magnetic resonance-guided linear accelerator in patients with head and neck cancer**

Dubec, M. J., Berks, M., McDaid, L., Little, R. A., Cheung, S., van Herk, M., Choudhury, A., Matthews, J. C., Parker, G. J. M., Buckley, D. L. & O'Connor, J. P. B., Jan 2025, In: Physics and Imaging in Radiation Oncology. 33, p. 100689

**Oxygen-enhanced MRI detects incidence, onset and heterogeneity of radiation-induced hypoxia modification in HPV-associated oropharyngeal cancer**

Dubec, M., Price, J., Berks, M., Gaffney, J., Little, R., Porta, N., Sridharan, N., Datta, A., McHugh, D., Hague, C., Cheung, S., Manoharan, P., Van Herk, M., Choudhury, A., Matthews, J., Parker, G., Buckley, D., Harrington, K. J., Mcpartlin, A. & O'Connor, J., 16 Dec 2024, In: Clinical Cancer Research. 30, 24, p. 5620-5629 10 p.

**Brief Report of a New Anatomical Region at Risk in Thoracic Radiotherapy: From Discovery to Implementation**

Banfill, K., Marchant, T., McWilliam, A., Wood, J., Schmitt, M., Abravan, A., Price, G., van Herk, M. & Faivre-Finn, C., Dec 2024, In: JTO Clinical and Research Reports. 5, 12, p. 100742

**Optimising inter-patient image registration for image-based data mining in breast radiotherapy**

Jaikuna, T., Wilson, F., Azria, D., Chang-Claude, J., De santis, M. C., Gutiérrez-Enríquez, S., Van herk, M., Hoskin, P., Kotzki, L., Lambrecht, M., Lingard, Z., Seibold, P., Seoane, A., Sperk, E., Paul symonds, R., Talbot, C. J., Rancati, T., Rattay, T., Reyes, V. & Rosenstein, B. S. & 7 others, De ruyscher, D., Vega, A., Veldeman, L., Webb, A., West, C. M., Aznar, M. C. & Vasquez osorio, E., 1 Oct 2024, In: Physics and Imaging in Radiation Oncology. 32, 100635.

**Pre-treatment magnetic resonance imaging in anal cancer: large-scale evaluation of mrT, mrN and novel staging parameters**

Sekhar, H., Kochhar, R., Carrington, B., Kaye, T., Tolan, D., Malcomson, L., Saunders, M. P., Sperrin, M., Sebag-Montefiore, D., van Herk, M. & Renehan, A. G., Oct 2024, In: British Journal of Cancer. 131, 7, p. 1137-1146 10 p.

**Comorbidity in patients with cancer treated at The Christie**

Abravan, A., Faivre-Finn, C., Gomes, F., Van herk, M. & Price, G., 4 Sept 2024, (E-pub ahead of print) In: British Journal of Cancer.

**PS07.39 FEASIBILITY OF AUTO-CONTOURING IN HEAD AND NECK REIRRADIATION**

Thiong'o, C. M., van Herk, M., Motamedi-Ghahfarokhi, G., Lowe, M., Thomson, D., Appelt, A. & Osorio, E. V., 1 Sept 2024, In: Physica Medica. 125, Supplement 1, 1 p., 104191.

**CT- and MR-based image-based data mining are consistent in the brain**

Wilson, L. J., Davey, A., Vasquez osorio, E., Fought, A. M., Green, A., Bulbeck, H., Thomson, A., Goddard, J., Mccabe, M. G., Merchant, T. E., Van herk, M. & Aznar, M. C., 27 Aug 2024, In: Physica Medica. 125, 104503.

**965: Individualised dose mapping uncertainty estimation for head and neck cancer re-irradiation.**

Thiong'o, C. M., Appelt, A., van Herk, M., Matthew, L., Thomson, D. & Vasquez Osorio, E., 3 May 2024, In: Radiotherapy and Oncology. 194, p. S3525-S3528

**2478: Developing geometrically robust diffusion-weighted MRI for head and neck imaging on an MR-Linac**

McHugh, D. J., Greenwood-Wilson, A., McDaid, L., Eccles, C., Thomson, D., Buckley, D. L., Choudhury, A., van Herk, M. & Dubec, M. J., May 2024, In: Radiotherapy and Oncology. 194, S1, p. S3923-S3926 4 p.

**Dose-dependent changes in cardiac function, strain and remodelling in a preclinical model of heart base irradiation**

Ghita-Pettigrew, M., Edgar, K. S., Kuburas, R., Brown, K. H., Walls, G. M., Facchi, C., Grieve, D. J., Watson, C. J., McWilliam, A., van Herk, M., Williams, K. J. & Butterworth, K. T., 1 Apr 2024, In: Radiotherapy and Oncology. 193, 110113.

**Geometric distortion caused by metallic femoral head prosthesis in prostate cancer imaging on an MR linac: in-vivo measurements of spatial deformation**

Mcdaid, L., Clough, A., Benson, K., Nelder, C., Mcmahon, J., Jackson, S., Aznar, M., Choudhury, A., van Herk, M. & Eccles, C., 1 Apr 2024, In: British Journal of Radiology. 97, 1156, p. 757-762 6 p.

**Contouring variation affects estimates of normal tissue complication probability for breast fibrosis after radiotherapy**

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**Unsupervised Correspondence with Combined Geometric Learning and Imaging for Radiotherapy Applications**

Henderson, E. G. A., Van herk, M., Green, A. F. & Osorio, E. M. V., 31 Oct 2023, *Shape in Medical Imaging: International Workshop, ShapeMI 2023, Held in Conjunction with MICCAI 2023*. Wachinger, C., Paniagua, B., Elhabian, S., Li, J. & Egger, J. (eds.). Cham, Switzerland: Springer Cham, p. 75-89 15 p. (Lecture Notes in Computer Science; vol. 14350).

**Single Institution Preliminary Evaluation of a National Study for the Development of Daily Online Magnetic Resonance Image Guided Radiotherapy**

Eccles, C., Dubec, M., Cobben, D., Van Herk, M., Mcdaid, L., Nelder, C., Whiteside, L., Davies, L., McHugh, L., Bridge, J., Fendallamaro, P., Chuter, R., Hoskin, P., Huddart, R. & Choudhury, A., 1 Oct 2023, In: International Journal of Radiation Oncology Biology Physics. 117, 2, p. E663-E663 1 p.

**Assessing Interaction between Toxicity Outcomes and Dose Surface Maps at the Bladder and Rectum in Prostate Cancer Patients - 2**

Puri, T., Van Herk, M., Vasquez Osorio, E., Shortall, J., Morris, A., Kerns, S., Azria, D., Farcy-Jacquet, M. P., Chang-Claude, J., Dunning, A. M., Lambrecht, M., Avuzzi, B., de Ruyscher, D. K. M., Sperk, E., Webb, A., Seibold, P., Talbot, C., Vega, A., Veldeman, L. & Rancati, T. & 5 others, Rosenstein, B., West, C., Choudhury, A., Hoskin, P. & Mcwilliam, A., 13 Sept 2023, (Accepted/In press).

**Predicting cancer relapse following lung stereotactic radiotherapy: an external validation study using real-world evidence**

Davey, A., Thor, M., van Herk, M., Faivre-Finn, C., Rimner, A., Deasy, J. O. & McWilliam, A., 12 Jul 2023, In: Frontiers in Oncology. 13, 1156389.

**Dysphagia At 1 Year is Associated with Mean Dose to The Inferior Section of The Brainstem**

Vasquez Osorio, E., Abravan, A., Green, A., Van Herk, M., Lee, L. W., Ganderton, D. & Mcpartlin, A., 17 Jun 2023, (E-pub ahead of print) In: International Journal of Radiation: Oncology - Biology - Physics.

**Dose outside of the prostate is associated with improved outcomes for high-risk prostate cancer patients treated with brachytherapy boost**

Shortall, J., Vasquez Osorio, E., Green, A., Mcwilliam, A., Reeves, K., Johnson-Hart, C., Beasley, W., Hoskin, P., Elumalai, T., Choudhury, A. & Van Herk, M. (Lead), 15 Jun 2023, In: Frontiers in Oncology. 13, 1200676.

**First-in-human technique translation of oxygen-enhanced MRI to an MR Linac system in patients with head and neck cancer**

Dubec, M. J., Buckley, D. L., Berks, M., Clough, A., Gaffney, J., Datta, A., McHugh, D. J., Porta, N., Little, R. A., Cheung, S., Hague, C., Eccles, C. L., Hoskin, P. J., Bristow, R. G., Matthews, J. C., van Herk, M., Choudhury, A., Jm Parker, G., McPartlin, A. & Pb O'Connor, J., 1 Jun 2023, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 183, 8 p., 109592.

**Reply to the Letter by Ma et al**

McWilliam, A., Abravan, A., Banfill, K., Faivre-Finn, C. & van Herk, M., 1 Jun 2023, In: Journal of thoracic oncology : official publication of the International Association for the Study of Lung Cancer. 18, 6, p. e64-e66 3 p.

**Demystifying the Results of RTOG 0617: Identification of Dose Sensitive Cardiac Subregions Associated With Overall Survival**

McWilliam, A., Abravan, A., Banfill, K., Faivre-Finn, C. & van Herk, M., 1 May 2023, In: Journal of Thoracic Oncology. 18, 5, p. 599-607 9 p.

**Probabilistic evaluation of plan quality for time-dependent anatomical deformations in head and neck cancer patients**

Robbins, J., van Herk, M., Eiben, B., Green, A. & Vásquez Osorio, E., 1 May 2023, In: Physica Medica. 109, 102579.

**The value of post Radiotherapy PSA dynamics for prostate cancer risk stratification models**

Shortall, J., Vasquez Osorio, E., Green, A., Wong, D., Puri, T., Hoskin, P., Choudhury, A., Van Herk, M. & McWilliam, A., May 2023.

**128 - Implementing heart-sparing radiotherapy for lung cancer**

Marchant, T., Price, G., McWilliam, A., Van Herk, M., Wood, J., Harris, C., King, J., Banfill, K. & Faivre-Finn, C., 24 Apr 2023, (E-pub ahead of print) p. S55-S56. 2 p.

**137 - Using heart contour volume variability as natural experiment to test the effect heart sparing**

van Herk, M., Abravan, A., Faivre-Finn, C. & McWilliam, A., 24 Apr 2023, (E-pub ahead of print) p. S59-S60. 2 p.

**The Impact of Training Dataset Size and Ensemble Inference Strategies on Head and Neck Auto-Segmentation**

Henderson, E. G. A., Van herk, M. & Osorio, E. M. V., 18 Apr 2023, p. 1-4.

**Assessing Interaction between Toxicity Outcomes and Dose Surface Maps at the Bladder and Rectum in Prostate Cancer Patients**

Puri, T., Van Herk, M., Vasquez Osorio, E., Shortall, J., Morris, A., Kerns, S., Azria, D., Farcy-Jacquet, M.-P., Chang-Claude, J., Dunning, A., Lambrecht, M., Avuzzi, B., de Ruyscher, D., Sperk, E., Webb, A., Seibold, P., Talbot, C., Vega, A., Veldeman, L. & Rancati, T. & 5 others, Rosenstein, B., West, C., Choudhury, A., Hoskin, P. & McWilliam, A., 14 Apr 2023, (Accepted/In press).

**Accurate segmentation of head and neck radiotherapy CT scans with 3D CNNs: consistency is key**

Henderson, E., Vasquez osorio, E., Van herk, M., Brouwer, C. L., Steenbakkens, R. J. H. M. & Green, A. F., 9 Mar 2023, (E-pub ahead of print) In: Physics in Medicine & Biology.

**Cardiac Function Modifies the Impact of Heart Base Dose on Survival: A Voxel-Wise Analysis of Patients With Lung Cancer From the PET-Plan Trial**

Craddock, M., Nestle, U., Koenig, J., Schimek-Jasch, T., Kremp, S., Lenz, S., Banfill, K., Davey, A., Price, G., Salem, A., Faivre-Finn, C., van Herk, M. & McWilliam, A., 1 Jan 2023, In: Journal of thoracic oncology : official publication of the International Association for the Study of Lung Cancer. 18, 1, p. 57-66 10 p.

**Evaluation of inter-breath hold liver reproducibility with and without a novel MR visual guidance system**

Daly, M., Hanson, H. M., Mcdaid, L., Choudhury, A., Higgins, D., McWilliam, A., Radhakrishna, G., Rowland, B., Van Herk, M. & Eccles, C., 2023, (Unpublished).

### **GAUSSIAN PROCESS CLUSTERING TO STUDY PSA DYNAMICS IN PROSTATE CANCER PATIENTS**

Shortall, J., Osorio, E. V., Green, A., Hoskin, P., Choudhury, A., Herk, M. V. & McWilliam, A., Dec 2022, In: *Physica Medica*.

### **Oxygen Enhanced-MRI for Hypoxia Imaging in Head and Neck Cancer**

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### **Prostate Magnetic Resonance Imaging Delta-Radiomics during Image-Guided Conventional Fractionation and Stereotactic Ablative Radiotherapy**

Portner, R., McWilliam, A., Zhong, J., Anjanappa, M., Tsang, Y. M., Mistry, H., Song, Y., Conroy, R., Price, G., Rankin, A., Shortall, J., Datta, A., Eccles, C., Merchant, T., Chuter, R., Henry, A., Herk, M. V., Hoskin, P., Choudhury, A. & Shortall, J., Nov 2022, In: *International Journal of Radiation: Oncology - Biology - Physics*.

### **Heart dose and cardiac comorbidities influence death with a cardiac cause following hypofractionated radiotherapy for lung cancer**

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### **Suitability of propagated contours for adaptive replanning for head and neck radiotherapy**

Nash, D., Palmer, A. L., van Herk, M., McWilliam, A. & Vasquez Osorio, E., Oct 2022, In: *Physica Medica*. 102, p. 66-72 7 p.

### **Automatic Identification of Segmentation Errors for Radiotherapy Using Geometric Learning**

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### **The geometric and dosimetric effect of algorithm choice on propagated contours from CT to cone beam CTs**

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### **Causal relation between heart irradiation and survival of lung cancer patients after radiotherapy**

Brink, C., Bernchou, U., Bertelsen, A., Hansen, O., Schytte, T., Hjelmberg, J. V. B., Holloway, L., van Herk, M., Johnson-Hart, C., Price, G. J., Aznar, M. C., McWilliam, A., Faivre-Finn, C. & Hansen, C. R., Jul 2022, In: *Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology*. 172, p. 126-133 8 p.

### **Clinical and radiomics prediction of complete response in rectal cancer pre-chemoradiotherapy**

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### **Image-based data mining applies to data collected from children**

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### **Role of Real-World Data in Assessing Cardiac Toxicity After Lung Cancer Radiotherapy**

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### **The impact of an educational tool in cervix image registration across three imaging modalities**

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**PD-0317 A novel method to predict OAR contour errors without a ground truth using geometric learning**

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**Feasibility of low-dose 4DCBCT for patient setup and motion measurement**

Lindsay, J., Bryce-Atkinson, A., Meara, S., Faivre-Finn, C., Eccles, C., Aznar, M. & van Herk, M., May 2022, In: Radiotherapy and Oncology. 170, p. S1422-S1425 5 p.

**First-in-human clinical translation of oxygen-enhanced MRI onto an MR Linac**

Dubec, M., Datta, A., Clough, A., Buckley, D., Little, R., Berks, M., Cheung, S., Eccles, C., Higgins, D., Naish, J., Matthews, J., van Herk, M., Bristow, R., Parker, G., Hoskin, P., McPartlin, A., Choudhury, A. & O'Connor, J., May 2022, In: Radiotherapy and Oncology. 170, p. S551-S552 2 p.

**Optimising a 3D convolutional neural network for head and neck computed tomography segmentation with limited training data**

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**Evaluating principal component analysis models for representing anatomical changes in head and neck radiotherapy**

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**Radial Data Mining to Identify Density-Dose Interactions That Predict Distant Failure Following SABR**

Davey, A., van Herk, M., Faivre-Finn, C. & McWilliam, A., 9 Mar 2022, In: Frontiers in Oncology. 12, p. 838155

**Clinico-pathological predictors of clinical complete response in rectal cancer**

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**Transfer learning for data-efficient abdominal muscle segmentation with convolutional neural networks**

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**Effect of systemic inflammation biomarkers on overall survival after lung cancer radiotherapy: a single-center large-cohort study**

Abravan, A., Salem, A., Price, G., Faivre-Finn, C. & van Herk, M., 1 Feb 2022, In: Acta oncologica (Stockholm, Sweden). 61, 2, p. 163-171 9 p.

**Identification of modes of tumor regression in non-small cell lung cancer patients during radiotherapy**

Amugongo, L. M., Green, A., Cobben, D., van Herk, M., McWilliam, A. & Osorio, E. V., Jan 2022, In: Medical Physics. 49, 1, p. 370-381 12 p.

**In Reply to Ebert et al.**

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**Early prediction of tumour-response to radiotherapy in NSCLC patients**

Amugongo, L. M., Osorio, E. V., Green, A., Cobben, D., van Herk, M. & McWilliam, A., 21 Nov 2021, In: Physics in Medicine and Biology. 66, 22, 225002.

**The impact of gadolinium-based MR contrast on radiotherapy planning for oropharyngeal treatment on the MR Linac**

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**Anatomical Association of Dose Distribution With Radiotherapy-Related Lymphopenia in Oropharynx Cancer**

Abravan, A., Vasquez Osorio, E., Green, A., McPartlin, A. & van Herk, M., 1 Nov 2021, In: International journal of radiation oncology, biology, physics. 111, 3, p. e419

**Learning healthcare systems and rapid learning in radiation oncology: Where are we and where are we going?"**

Price, G., Mackay, R., Aznar, M., McWilliam, A., Johnson-Hart, C., van-Herk, M. & Faivre-Finn, C., 1 Nov 2021, In: Radiotherapy and Oncology. 164, p. 183-195 13 p.

**The Impact of Intra-thoracic Anatomical Changes upon the Delivery of Lung Stereotactic Ablative Radiotherapy**

Brown, S., Beasley, M., Aznar, M. C., Belderbos, J., Chuter, R., Cobben, D., Faivre-Finn, C., Franks, K., Henry, A., Murray, L., Price, G. & van Herk, M., 1 Oct 2021, In: Clinical Oncology. 33, 10, p. e413-e421

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**The theoretical benefit of beam fringe compensation and field size reduction for iso-normal tissue complication probability dose escalation in radiotherapy of lung cancer.**

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**New method to obtain the midplane dose using portal in vivo dosimetry.**

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Van Herk, M., Boellaard, R., van Herk, M. & Mijnheer, B. J., Sept 1996, In: Medical Physics. 23, 9

**Interactive three dimensional inspection of patient setup in radiation therapy using digital portal images and computed tomography data.**

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**Quantification of organ motion during conformal radiotherapy of the prostate by three dimensional image registration.**

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**Variation in volumes, dose-volume histograms, and estimated normal tissue complication probabilities of rectum and bladder during conformal radiotherapy of T3 prostate cancer.**

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Van Herk, M., van Herk, M. & Kooy, H. M., Jul 1994, In: Medical Physics. 21, 7

**Image fusion for stereotactic radiotherapy and radiosurgery treatment planning.**

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**An algorithm for automatic analysis of portal images: clinical evaluation for prostate treatments.**

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**A verification procedure to improve patient set-up accuracy using portal images.**

Van Herk, M., Bel, A., van Herk, M., Bartelink, H. & Lebesque, J. V., Nov 1993, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 29, 2

**Verification of lung attenuator positioning before total body irradiation using an electronic portal imaging device.**

Van Herk, M., Gladstone, D. J., van Herk, M. & Chin, L. M., 30 Sept 1993, In: International journal of radiation oncology, biology, physics. 27, 2

**Automatic on-line inspection of patient setup in radiation therapy using digital portal images.**

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**A fast algorithm for local minimum and maximum filters on rectangular and octagonal kernels**

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**A review of electronic portal imaging devices (EPIDs).**

Boyer, A. L., Antonuk, L., Fenster, A., Van Herk, M., Meertens, H., Munro, P., Reinstein, L. E. & Wong, J., 1992, In: Medical Physics. 19, 1

**Automatic verification of radiation field shape using digital portal images.**

Van Herk, M., Bijhold, J., Gilhuijs, K. G. & van Herk, M., 1992, In: Medical Physics. 19, 4, p. 1007-14

**Sampling methods for a matrix ionization chamber system.**

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**Fast evaluation of patient set-up during radiotherapy by aligning features in portal and simulator images.**

Van Herk, M., Bijhold, J., van Herk, M., Vijlbrief, R. & Lebesque, J. V., Dec 1991, In: Physics in Medicine and Biology. 36, 12

**Radiation field edge detection in portal images.**

Van Herk, M., Bijhold, J., Gilhuijs, K. G., van Herk, M. & Meertens, H., Dec 1991, In: Physics in Medicine and Biology. 36, 12

**Physical aspects of a liquid-filled ionization chamber with pulsed polarizing voltage.**

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**First clinical experience with a newly developed electronic portal imaging device.**

Van Herk, M., Meertens, H., van Herk, M., Bijhold, J. & Bartelink, H., May 1990, In: International journal of radiation oncology, biology, physics. 18, 5

**An inverse filter for digital restoration of portal images.**

Van Herk, M., Meertens, H., van Herk, M. & Weeda, J., Jun 1988, In: Physics in Medicine and Biology. 33, 6

**A matrix ionisation chamber imaging device for on-line patient setup verification during radiotherapy.**

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**A liquid ionisation detector for digital radiography of therapeutic megavoltage photon beams.**

Van Herk, M., Meertens, H., van Herk, M. & Weeda, J., Apr 1985, In: Physics in Medicine and Biology. 30, 4

## **Activities**

### **Beyond Quantec**

Van Herk, M. (Chair)

24 Feb 2020 → 25 Feb 2020

### **AERO Academy Conference**

Van Herk, M. (Chair)

7 Feb 2020 → 8 Feb 2020

### **Data mining for adaptive radiotherapy**

Van Herk, M. (Invited speaker)

17 Jan 2020

**4D Treatment Workshop for Particle Therapy 2019**

Van Herk, M. (Chair)  
23 Nov 2019

**George Edelstyn Lecture**

Van Herk, M. (Speaker)  
4 Oct 2019

**Advanced Treatment Planning**

Van Herk, M. (Member of programme committee)  
22 Sept 2019 → 26 Sept 2019

**Radiotherapy / Modelling and theranostics**

Van Herk, M. (Speaker)  
29 Aug 2019

**The 4th Christie Advanced Radiotherapy Summer School**

Van Herk, M. (Chair)  
3 Jul 2019

**Highlight talk: Restoring a Data General Nova computer used in the first CT scanner**

Van Herk, M. (Speaker)  
18 Jun 2019

**Comparing two web platforms for uncertainty simulation of external beam radiotherapy**

Van Herk, M. (Speaker)  
17 Jun 2019

**Dose Calculation and Optimisation**

Van Herk, M. (Speaker)  
13 Jun 2019

**Tools & technologies for adaptive radiotherapy**

Van Herk, M. (Speaker)  
12 Jun 2019

**Debate: This house believes that margin reduction is the key to improved outcome. For the motion**

Van Herk, M. (Speaker)  
28 Apr 2019

**Cutting Edges and Challenges: Data Sharing: Needs, Opportunities and Issues.**

Van Herk, M. (Invited speaker)  
27 Mar 2019

**Predicting Tumour Control and Survival: Upcoming Results on Treatment Failure and Survival**

Van Herk, M. (Invited speaker)  
26 Mar 2019

**IGRT for CNS and Head and Neck**

Van Herk, M. (Speaker)  
20 Feb 2019

### **Uncertainties in image registration and contour propagation**

Van Herk, M. (Speaker)  
20 Feb 2019

### **Technology: Planar imaging, MV and kV**

Van Herk, M. (Speaker)  
18 Feb 2019

### **Learning from every SBRT patient treated**

Van Herk, M. (Invited speaker)  
5 Oct 2018

### **Adaptive planning strategies - Robust & probabilistic planning - Rigid and non-rigid multimodality image registration**

Van Herk, M. (Invited speaker)  
25 Sept 2018

### **Adaptive Radiotherapy**

Van Herk, M. (Invited speaker)  
4 Jul 2018

### **Adaptive Radiotherapy: Adaptive RT Developments**

Van Herk, M. (Invited speaker)  
Jul 2018

### **Radiation Oncology Physics and Systems: Learning from every patient treated**

Van Herk, M. (Keynote speaker)  
Jun 2018

### **ESTRO 23, October 2004**

Van Herk, M. (Participant)  
Oct 2004

## **Prizes**

### **Breur Award**

Van Herk, M. (Recipient), 2004

### **Impact Award**

Van Herk, M. (Recipient), 19 Jun 2018

### **Netherlands Cancer Institute awards**

Van Herk, M. (Recipient), 2015

## **Awards**

## **Projects**

### **15HLTO8 Consortium - EURAMET - EMPIR**

Van Herk, M. (PI) & Kirkby, K. (Col)  
1/06/16 → 31/05/19

### **Advanced Radiotherapies Technologies Network (ART-NET)**

Faivre-Finn, C. (PI), Illidge, T. (Col), Kirkby, K. (Col) & Van Herk, M. (Col)  
1/09/16 → 31/08/21

### **A Tool for Predicting an Individual Prostate Cancer Patient's Risk of Metastasis and Need for Lymph Node Irradiation.**

Choudhury, A. (PI), Kirkby, N. (Col), McWilliam, A. (Col), Van Herk, M. (Col) & West, C. (Col)  
1/03/17 → 28/06/20

### **MANchester REsearch Transforming Radiation Oncology (MAESTRO) Programme as Part of CRUK RadNet.**

Bristow, R. (PI), Burnet, N. (Col), Choudhury, A. (Col), Dive, C. (Col), Faivre-Finn, C. (Col), Hagan, I. (Col), Hoskin, P. (Col), Hussell, T. (Col), Illidge, T. (Col), Kirkby, K. (Col), Kostarelos, K. (Col), O'Connor, J. (Col), Peek, N. (Col), Rattray, M. (Col), Taylor, S. (Col), Thornton, D. (Col), Van Herk, M. (Col), West, C. (Col), Whetton, A. (Col), Williams, K. (Col) & Yorke, J. (Col)  
1/11/19 → 31/10/24

### **NIHR Biomedical Research Centre: Cancer Advanced Radiotherapy Theme.**

West, C. (PI), Bristow, R. (Col), Bruce, I. (Col), Burnet, N. (Col), Choudhury, A. (Col), Evans, D. (Col), Faivre-Finn, C. (Col), Hoskin, P. (Col), Illidge, T. (Col), Kirkby, K. (Col), Kirkby, N. (Col), O'Connor, J. (Col) & Van Herk, M. (Col)  
1/04/17 → 31/03/19

### **NIHR Manchester Biomedical Research Centre**

Bruce, I. (PI), Lord, G. (Col), Lennon, R. (Col), Black, G. (Col), Wedge, D. (Col), Morris, A. (Col), Hussell, T. (Col), Sharrocks, A. (Col), Stivaros, S. (Col), Buch, M. (Col), Gough, J. (Col), Kostarelos, K. (Col), Thistlethwaite, F. (Col), Kadler, K. (Col), Barton, A. (Col), Hyrich, K. (Col), Mcbeth, J. (Col), O'Neill, T. (Col), Vestbo, J. (Col), Simpson, A. (Col), Singh, S. (Col), Smith, J. (Col), Felton, T. (Col), Murray, C. (Col), Griffiths, C. (Col), Cullum, N. (Col), Rhodes, L. (Col), Warren, R. (Col), Paus, R. (Col), Dumville, J. (Col), Viroso Usandizaga, A. (Col), Keavney, B. (Col), Tomaszewski, M. (Col), Allan, S. (Col), Body, R. (Col), Cartwright, E. (Col), Heagerty, A. (Col), Kalra, P. (Col), Miller, C. (Col), Rutter, M. (Col), Smith, C. (Col), Trafford, A. (Col), Evans, D. (Col), Davidson, E. (Col), Crosbie, P. (Col), Harvie, M. (Col), Howell, S. (Col), Renehan, A. (Col), Dive, C. (Col), Blackhall, F. (Col), Landers, D. (Col), Krebs, M. (Col), Cook, N. (Col), Clarke, R. (Col), Taylor, S. (Col), Jorgensen, C. (Col), Lorigan, P. (Col), Jayson, G. (Col), Valle, J. (Col), McCabe, M. (Col), Armstrong, A. (Col), Freitas, A. (Col), Illidge, T. (Col), Choudhury, A. (Col), Hoskin, P. (Col), West, C. (Col), Van Herk, M. (Col), Faivre-Finn, C. (Col), Bristow, R. (Col), Kirkby, K. (Col), Birtle, A. (Col), Mackay, R. (Col), Radford, J. (Col), Linton, K. (Col), Higham, C. (Col), Munro, K. (Col), Plack, C. (Col), Arden Armitage, C. (Col), Bruce, I. (Col), Moore, D. (Col), Saunders, G. (Col), Stone, M. (Col), Haddock, G. (Col), Lewis, S. (Col), Elliott, R. (Col), Green, J. (Col), Lovell, K. (Col), Morrison, A. (Col), Shaw, J. (Col), Bucci, S. (Col), Ainsworth, J. (Col), Webb, R. (Col), Newman, W. (Col), Banka, S. (Col), Clayton-Smith, J. (Col), Payne, K. (Col), Moldovan, R. (Col), Wynn, R. (Col) & Jones, S. (Col)  
1/12/22 → 30/11/27

## **Datasets**