

## ESTRO 2024, Glasgow 3-7<sup>th</sup> May

Dr Stacey McGowan Holloway, Research Fellow, CRUK RadNet Glasgow

ESTRO 2024 took place in Glasgow at the Scottish Exhibition and Conference Centre and Armadillo and I am grateful to both IPEM and CRUK RadNet Glasgow who joint funded my registration and expenses via an IPEM conference grant. The conference was attended by 7046 delegates from 201 countries (some of whom also got to attend the Take That concert at the same venue that weekend!) and had a record of 2895 abstracts submitted. The conference was well shared on social media platforms such as X and LinkedIn using the hashtag #ESTRO24.

Researchers and NHS staff across Glasgow working in radiation oncology had over 45 abstracts accepted and there was a general feeling of excitement to have ESTRO hosted in our home city. To make this event even more poignant the Chair of Clinical Oncology, University of Glasgow and CRUK RadNet Glasgow Director, Professor Anthony Chalmers, received the Interdisciplinary Award for his cross disciplinary work in radiobiology and oncology. The clinical department also provided a tour of the Beatson West of Scotland Cancer Centre Radiotherapy department for the delegates and took a Q&A afterwards at the Grosvenor Hotel.



*Image 1-2: Prof Anthony Chalmers, University of Glasgow receiving the Interdisciplinary Award. The Glasgow team at ESTRO 24. Image Credit: CRUK RadNet Glasgow*

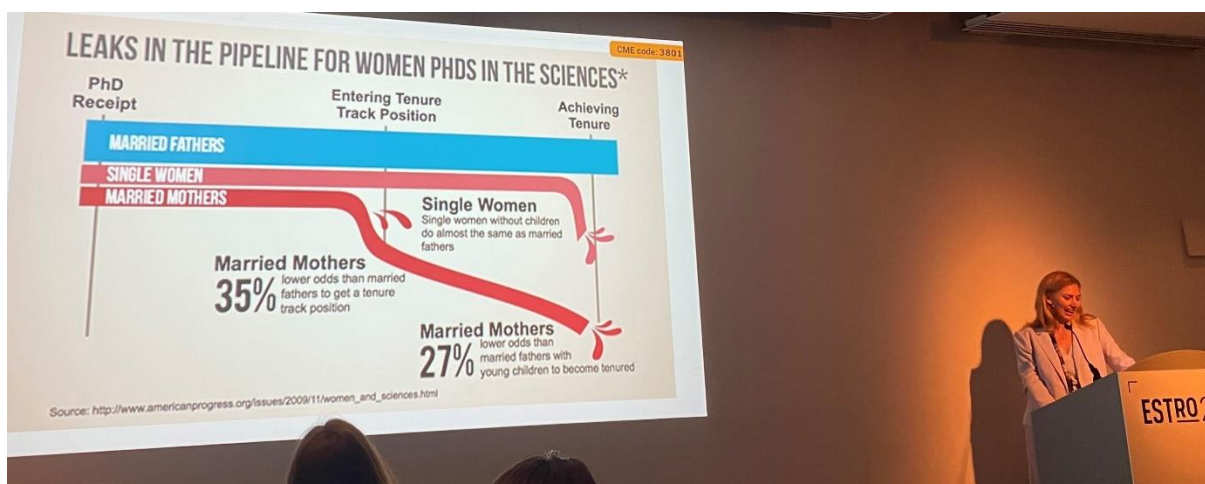
### Subtitle: **Mind the Gaps**

Along with symposia, debates and teaching lectures, the scientific programme featured panel discussions and pitch sessions. The session tracks included Clinical, Brachytherapy, Physics, RTT, Young, interdisciplinary and radiobiology as well as Go Green Sessions.

The congress theme this year was **Radiation Oncology: Bridging the Care Gap** with the Presidential Symposium opening talk by Ajay Aggarwal, Professor of

cancer services London, with a slide on 'The Glasgow Effect' demonstrating the socioeconomic diversity seen over a distance of 8 miles in Glasgow and the acute effect on life expectancy - from 82 years to 54 years. From this local scale the following talks focussed on gaps in larger geographic regions from the national to the global scale, including a talk on the east-west divide where one stark difference seen was in the level of research being undertaken and the access to research funding. Nationally, Timonthy Hanna, clinician scientist in epidemiology shared his experiences from Canada and called for regional and national coalitions in the form of virtual tumour boards, communities of practice and workforce modelling. A key message across all the talks was political; health access and outcomes are directly linked to taxation and spending in the social sector, and that who we vote for has the biggest impact on population health 'so choose wisely.'

A highlight for me was the **Estro Women in Physics** lunch organised by Marianne Aznar, University of Manchester with guest speaker Kristy Brock from MD Anderson. In this lunch the gender gaps were revealed in our profession despite it seeming to be a field with gender balance, though noted not necessarily in senior level positions. These gaps included awards (women did better when the panel was blinded), funding recipients, journal editors and editorial boards, council chairs (the only female chairs in AAPM have been in administrative roles) and even ESTRO membership, which has sat at ~35% women vs 65% men for past 4 years, none of which had representation matching that of the workforce. The lunch also provided a brilliant networking event and a key message from Brock was women need champions not just mentors to succeed and she ended with a call to action for women to champion each other.



Images 3: Estro Women in Physics slide by Kristy Brock. Having just returned from parental leave, this slide was hard hitting.

**Subtitle: Physics track**

A major theme in the physics track unsurprisingly was AI with teaching lectures on commissioning AI applications such as dose accumulation, DIR and auto-contouring, invited talks on fairness in AI, and even a curated 'ESTRO journey' so you would not miss a poster discussion or proffered paper on this topic.

The next big topic in the physics track was deformable image registration and dose accumulation. Two symposia in this theme I found of particular interest were the ESTRO - ACPSEM symposium on the 2021 physics workshop on DIR commissioning and QA and the joint ESTRO-AAPM symposium.

Mohammad Hussein provided feedback on the ESTRO - ACPSEM 2021 physics workshop on DIR commissioning and QA. The workshop was driven by outputs from two surveys on clinical application of DIR by both ESTRO and ACPSEM. Three subgroups were established, each led by someone in an early stage of their career and supported by a more senior person and each subgroup presented in the session.

The first was the application and usage of dose mapping/accumulation in radiotherapy. An output was a schematic of the current landscape shown in fig 1. A key message was to be aware of limitations, strive for context driven DIR rather than perfect DIR and dose mapping may be better than not mapping.

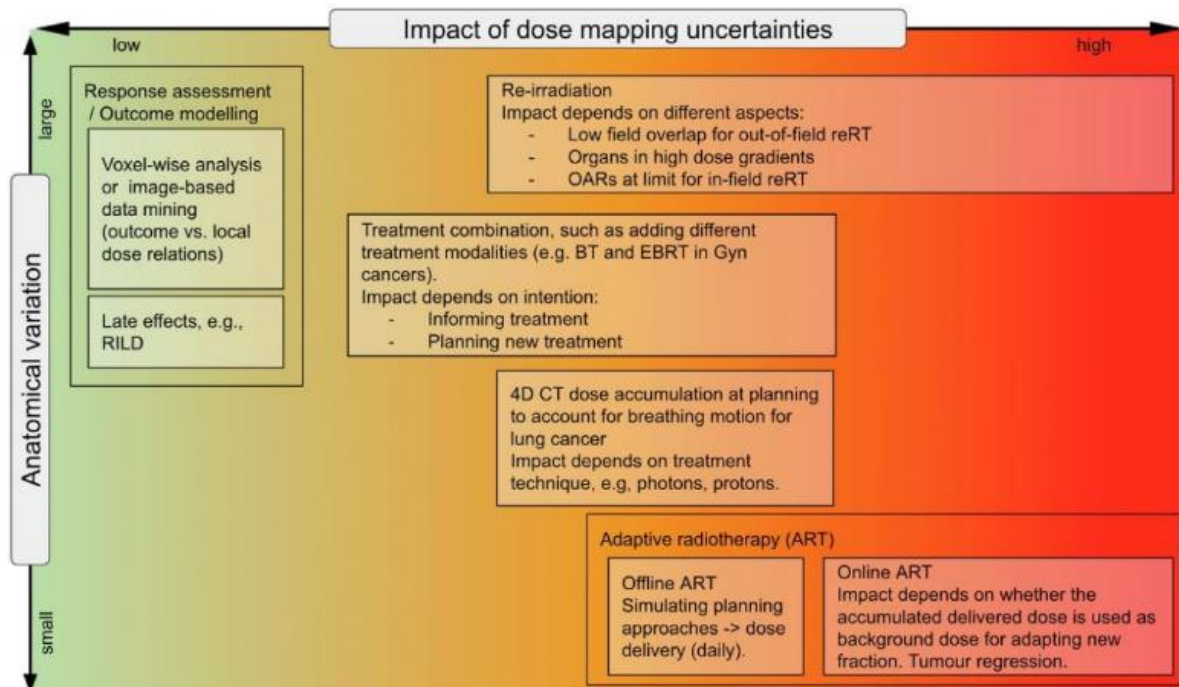


Fig 1: Current Dose Mapping and Accumulation Landscape from [Applicability and usage of dose mapping/accumulation in radiotherapy - Radiotherapy and Oncology \(thegreenjournal.com\)](https://www.thegreenjournal.com)

The next working group talk was recommendations for commissioning and QA of DIR and gave an overview of metrics presented in AAPM Report TG132. The ESTRO/ACPSEM survey results showed that there was still a need for standardisation and additional tools for commissioning and QA. Take aways were the limitations of metrics for QA, to compare results to rigid and to no registrations, use of digital phantoms and there is a need for more metrics to be incorporated into commercial software.

The final working group talk was on the impact of DIR uncertainties and focused on two types on uncertainty: anatomical and algorithmic. The greatest challenge being that there is no ground truth. It was noted in all talks that both geometric and dosimetric uncertainties exist in the dose gradients, and not to trust them.

In the ESTRO-APPM symposium Kristy Brock presented the intensive workflow from Princess Margaret Cancer Centre in Canada (Image 4) using dose accumulation for online daily adaption. Requirements were fast segmentation, DIR and dose calculation and optimisation. She summarised that evidence of clinical impact of daily adaption from dose accumulation is becoming available, but a limitation is the time requirement by a multidisciplinary team requiring 40-80+ minutes per patient.

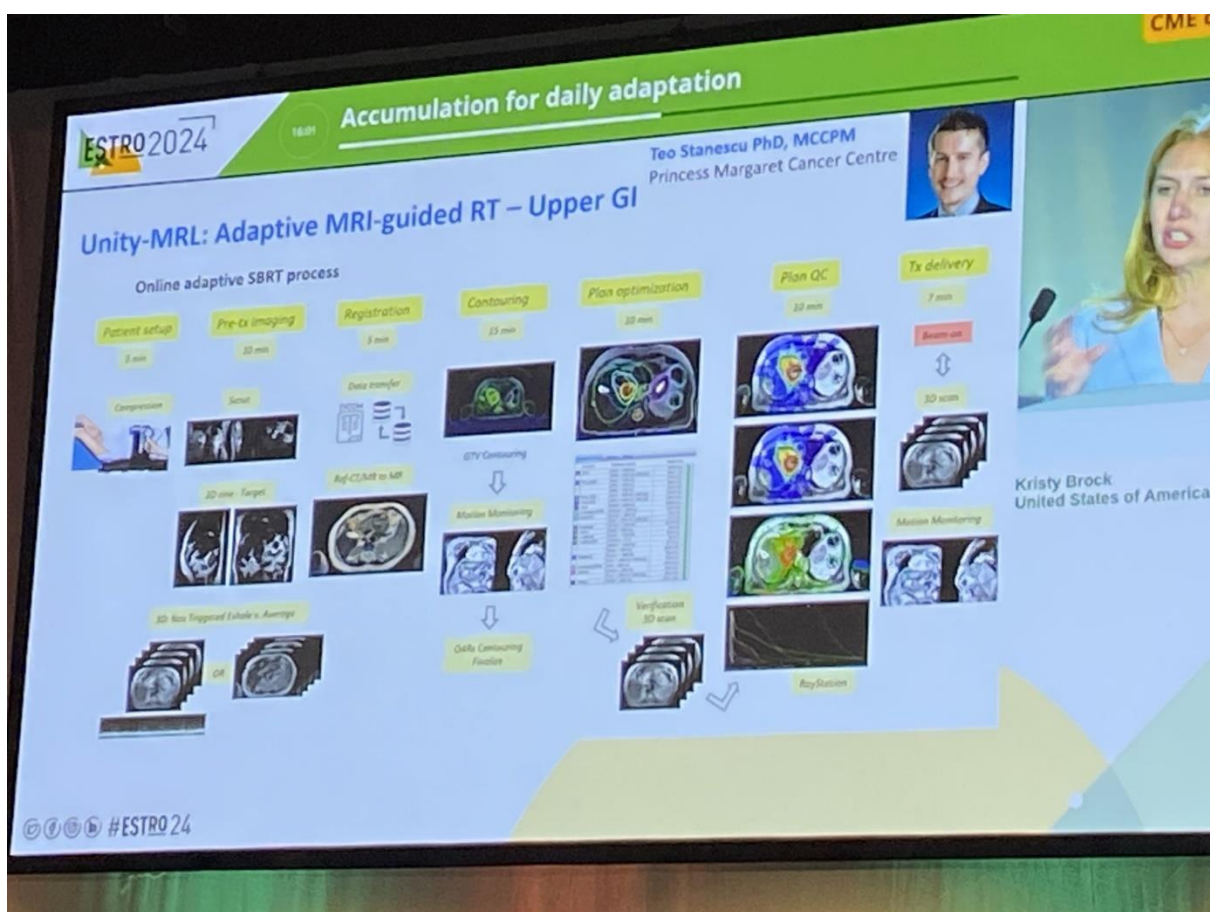


Image 4. Princess Margaret Cancer Centre in Canada using dose accumulation for online daily adaption

<b>Table 1: Physics Awards</b>
<b>Emmanuel van der Schueren Award Lecture:</b> Marcel van Herk, UK: 25 years of ESTRO teaching, from big brother to big data
<b>Jens Overgaard Legacy Award Lecture:</b> David Thwaites, UK and Australia: Bridging the evidence gap: From physics and technology innovations to clinical practice
<b>Best Brachytherapy Paper Award:</b> Jose-Luis Guinot, Spain Five-year results of Very Accelerated Partial Breast Irradiation VAPBI phase I-II GEC-ESTRO trial
<b>Best Physics Paper Award:</b> Matteo Maspero, The Netherlands Generating synthetic computed tomography for radiotherapy: SynthRAD2023 challenge report.

**Subtitle: Clash of the Tartans**

As ever the closing debate was eagerly awaited and well attended, this year the motion; **This house believes that the radiation therapy care pathway will be delivered entirely by bots by 2040.** For the motion was Andrew Hope, Canada & Stine Korreman, Denmark. Against the motion was Andre Dekker, The Netherlands & Eliana Maria Vasquez Osorio, United Kingdom

The speakers did not disappoint with both well-argued, witty and entertaining performances on each side of the motion. Against won by public vote. I want to make a special mention to Eliana Maria Vasquez Osorio from The Christie for her outstanding debate debut!



*Images 5-8: Andrew Hope and the Hope tartan, A winning slide from Eliana with an example of AI failure! Photo of the winning team. Photo Credit: Ane Appelt.*

**Subtitle: In summary**

Overall, ESTRO 2024 provided a platform for knowledge exchange, networking, and collaboration among experts in the field, addressing key challenges and opportunities facing the global radiation oncology community, from AI to more direct patient involvement. It was as ever, a fantastic conference, fuelling ideas, collaborations, inspiration, and motivation.

Huge congratulations and thank you to the ESTRO committee and community, to Anna Kirby, the outgoing Chair of ESTRO 2024 and ESTRO President for putting together an excellent programme and enjoyable and well-organised conference. Estro 2025 will be held in Vienna next May, the incoming chair and president is Matthias Guckenberger, Radiation Oncologist from the University Hospital Zurich.

**I was very fortunate and grateful to receive funding to attend ESTRO24, supported by CRUK RadNet Glasgow and an IPEM conference bursary. Thank you to both.**