

**The Royal College of Radiologists
RCR-Cyclotron Trust Visiting Fellowships 2022/23 (Clinical Oncology)**

POST-VISIT REPORT

1. Name of Visiting Fellow	Dr Kamran Fathi (Senior Medical Physicist)	
2. Name of joint Visiting Fellow (if applicable)	Dr Will Coxford	
3. Institution(s) of Visiting Fellow(s)	The Christie NHS FT	
4. Name of Host(s)	Prof Markus Stock/ Eugen Hug	
5. Institution(s) of host(s)	MedAustron Ion Therapy Centre	
6. Expenses claimed	£	
7. Visit Dates (ACTUAL)	a. Start Date 11/05/2024	b. End Date 18/05/2024
8. 2nd visit dates (if applicable)	a. Start date	b. End Date
9. Aims of the visit		
<ul style="list-style-type: none"> • Follow patient pathway from patient referral to post-treatment • See what sites are being treated and how (sites that we might be interested in the future for us at christie) <ul style="list-style-type: none"> ○ Proton vs Carbon ion therapy • Understand planning challenges for both Proton and C-ion • Observe change management (shape change, Sinus filling or emptying, machine malfunction etc) • Learn on how the independent dose calculation MyQA Ion is being used • Understand the approach to uncertainty both physics and clinicians perspective • Observe dosimetry routine and equipment used • To establish working relationship for potential collaboration (research and audits) 		

10. Activities undertaken

- Attended
 - Morning huddles (new patients being discussed)
 - Contour peer review
 - Planning peer review
 - Treatment session (discussing immobilisation and treatments)
- Physics bi-weekly meeting
- Tour of the institute & discussion
 - Ion generation
 - Research room
 - Treatment rooms and gantry room
 - Dosimetry room
 - Research labs (Radiobiology labs and Micro-dosimetry lab)
- Meeting
 - Head of Medical physics
 - Head of planning and checking
 - Head of QA and dosimetry
 - Head of development and implementation
 - Clinician discussing MKM & LEM models
 - Physicist discussing investigation around RayStation TPS and LET optimisation
- Reviewing planning Protons and Carbon ion with physicist
- Discussing SBRT- PATHY (PARTIAL Tumour irradiation targeting HYpoxic segment) trial
- Attended overnight shift observing commissioning work on MATEO eye treatment service to treat first patient by end of the year

11. Benefits of the visit (short term)

I have a better understating of carbon ion treatment and its difference to proton. I now appreciate the challenges of carbon ion treatment in practice and challenges of a centre with multiple particles and treatment options (Horizontal – fixed beam lines and gantry). I also observed the solutions to some mutual challenges any particle therapy centre might face.

12a. Envisaged benefits of the visit longer term (your own practice)

Potential collaborative work with physicists in dosimetry and QA aspect but also treatment planning.
Great opportunity to network and learn about independent dose calculation and frequency of QA.
Clear benefit on work around the PSQA I'm working on.

12b. Envisaged benefits to the wider group (dissemination to others in your centre/clinical oncology community/multiprofessional team)

I have scheduled a session to share my experience from the visit with the team. I have also arranged for the Head of Medical Physics at the host centre to give a talk. There will be further discussion to try and collaborate on various projects.

Learned about challenges that should be considered when opening a new carob ion therapy centre. For example, C-ion is only provided in fixed beam (Vertical or horizontal), having a gantry could greatly help with the treatment options.

13. Please outline any problems you encountered before, during or after your visit

No Problems

Very helpful, supportive and organised admin team that made the visit very efficient.

14. Any additional comments

I truly enjoyed my visit to MedAustron, a timetable was provided that had incorporated all the different aspects that I wanted to see and learn about the centre. The whole team were very friendly and approachable. Although very busy with long shifts but they were always open for discussion and explanation of various topics.

Particularly enjoyed the research culture and being open for discussing new ideas.

15. Do you have any 'top tips' that you would like to share with prospective visiting fellows?

As I did, I suggest anyone visiting to send a list of preferred areas/topics they would like to be covered. It helped the organisers to develop a timetable.

I stayed at the Plaza Inn which was 2 mins walk to the centre. There are limited facilities around the centre however you can hire bicycle and make your way to the town 10mins cycle.

I would like to thank the cyclotron trust for funding the visit and everyone else that made the visit possible.

Signed: Kamran Fathi



Date: 20/05/2024

Report approved by: Clinical Oncology Professional Support and Standards Board

Date: 29/5/24