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RAPTOR (Real-time Adaptive Particle Therapy Of cancer) School: Loop Requirements – Interview with Arthur Galapon

Mr Brunner: Hello Arthur, could you briefly introduce yourself please? What is your name, what do you study and where are you from?

Mr Galapon: My name is Arthur Galapon. I'm an early-stage researcher (ESR 4) on the real-time adaptive particle therapy of cancer (RAPTOR) project and I'm doing my PhD at University Medical Center Groningen in The Netherlands. I'm originally from the Philippines, but I spent some time in Europe for my master's.

Mr Brunner: How did you learn about the RAPTOR school on 'loop requirements'?

Mr Galapon: I am part of the RAPTOR project, and as PhDs, we are required to attend the school. We have three raptor schools spread over the entire course of the project. The first one was in December of last year, the second one is the one we're currently participating in (in September 2022) and the last one will be in September of next year (2023).

Mr Brunner: It is now the last day of the school. What is your general impression, now that we're almost done?

Mr Galapon: My overall impression is that it's very informative. I think this school is really perfect if you want to learn more about particle therapy. It offers a lot of different topics, ranging from physics to entrepreneurship, and on certifications and regulations, and on clinical subjects. There are many things that I hadn't experienced before and didn't know about. This made me realise that particle therapy is more than just the physics of it, that it's actually an interconnection of different fields.

Mr Brunner: What are the intersections between adaptive particle therapy (APT) and your PhD project?

Mr Galapon: My project is related to the imaging part of APT. As ESR 4, I'm working on the advanced use of MRI in APT. I want to ensure we can utilise the advantages of MRI images in APT. For example, MRI can offer high contrast in soft tissue regions, so you can more easily delineate the different organs and tumours. Thus, we can deliver the beam to more precisely defined targets, as opposed to only relying on CT images.

Mr Brunner: Was there a talk or presentation you were particularly looking forward to before school started? Has it lived up to your expectations?

Mr Galapon: I was actually looking forward to two! The first one was about deep learning applications in radiotherapy and imaging, which interests me, since I'm also working with deep learning.

The other one was on clinical quality assurance (QA). One of the paths I can see myself taking after my PhD is in the clinical field. It's very interesting for me to see the QA side of radiotherapy. How do you do QA? What are your requirements and goals for QA? These types of questions.

Both of them gave me lots of insight into their respective topics.

Mr Brunner: Has there been a talk that particularly surprised or impressed you?

Mr Galapon: Yes, I was positively surprised by the last talk Esther Troost (professor of image-assisted high-precision radiation therapy at the Technische Universität, Dresden, Germany) gave about the clinical needs for APT. I didn't expect it to be that interesting, since the talk was from a point of view we're usually not exposed to. For instance, we're mostly in the office, so we don't see how the clinical workflow happens. It was surprising to me just how many things need to happen when you operate a clinic.

Mr Brunner: *To wrap things up, I'd like to ask you: is there an impression or a message you're excited to take home from the RAPTOR school?*

Mr Galapon: I have two. One was formed during the round table on Monday. My impression from those talks was "the future is exciting for us". We're not particularly bound to one field of work. We have a lot of different opportunities in clinical, research or industrial fields. I would be very excited to go into any of these fields.

The second one I picked up during the opening talk by Mark Pleško (founder and chief executive of control systems company Cosylab, Slovenia) about entrepreneurship and is also related to the public talk by Rock Mackie (medical physics professor, University of Wisconsin-Madison, USA). What I took away from those talks was: just try to take your chance to start a company. We already have a lot of resources at our disposal. We're developing our network; we're gathering the necessary skills and knowledge. It's just a matter of finding the right problems and issues to address. Once you have that, just take that jump and start to provide your solutions to everyone.



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