

SCIENTIFIC PROGRAMME

Course Director

Rob Tijssen (NL)

Faculty

Cihan Gani (DE)
Christian Richter (DE)
Kathrine Røe Redalen (NO)
Patrick Brynolfsson (SE)
Rune Slot Thing (DK)

Guest Teacher

Joanna Kazmierska

DAY 1 – Status Quo and recommendations, MONDAY 29 JANUARY

| Time | Lecture | Speaker |
|---------------|--|----------------------|
| 09.00 – 09.40 | MRI for RTP*: how & where to start | Rob Tijssen |
| 09.40 – 10.20 | CT for RTP*: technical requirements and QA guidelines | Christian Richter |
| 10.20 – 10.40 | <i>Coffee break</i> | |
| 10.40 – 11.20 | CBCT: what determines image quality? | Rune Slot Thing |
| 11.20 – 12.00 | Image registration tools | Patrik Brynolfsson |
| 12.00 – 13.00 | <i>Lunch break</i> | |
| 13.00 – 13.40 | PET: What is going on? Where are we going? | Cihan Gani, DE |
| 13.40 – 14.20 | PET: pitfalls in image reconstruction and quantification | Kathrine Røe Redalen |
| 14.20 – 14.40 | <i>Coffee break</i> | |
| 14.40 – 16.30 | Peer-to-peer sessions | All |

*RTP =
radiotherapy
treatment
planning

DAY 2 – Advanced applications currently used, TUESDAY 30 JANUARY

| Time | Lecture | Speaker |
|---------------|--|----------------------|
| 09.00 – 09.40 | 4D-CT and 4D-CBCT explained | Rune Slot Thing |
| 09.40 – 10.20 | Optimizing MRI sequences for RTP | Rob Tijssen |
| 10.20 – 10.40 | <i>Coffee break</i> | |
| 10.40 – 11.20 | Diffusion MRI for RT; opportunities and challenges | Cihan Gani |
| 11.20 – 12.00 | State of the art (auto)-segmentation tools | Patrik Brynolfsson |
| 12.00 – 13.00 | <i>Lunch break</i> | |
| 13.00 – 13.40 | EPI & Diffusion from MR physics perspective | Rob Tijssen |
| 13.40 – 14.20 | The use of QMRI and PET for adaptive radiotherapy | Kathrine Røe Redalen |
| 14.20 – 14.40 | <i>Coffee break</i> | |
| 14.40 – 15.20 | Dual energy/spectral CT | Christian Richter |
| 15.20 – 16.00 | Q&A | All |

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DAY 3 – Hot & happening, WEDNESDAY 31 JANUARY

| Time | Lecture | Speaker |
|---------------|--|----------------------|
| 09.00 – 09.40 | AI for MR image reconstruction (4D and real-time) | Rob Tijssen |
| 09.40 – 10.20 | High precision image-guided proton therapy in 10 years | Christian Richter |
| 10.20 – 10.40 | <i>Coffee break</i> | |
| 10.40 – 11.20 | Latest developments in MRgRT: trials you should know about | Cihan Gani |
| 11.20 – 12.00 | Will imaging make personalized dose prescription feasible? | Kathrine Røe Redalen |
| 12.00 – 13.00 | <i>Lunch break</i> | |
| 13.00 – 13.40 | Dose accumulation. Nearly there, or just a pipedream? | Patrik Brynolfsson |
| 13.40 – 14.20 | CBCT beyond IGRT | Rune Slot Thing |
| 14.20 – 14.40 | <i>Coffee break</i> | |
| 14.40 – 15.20 | The use of AI in RT from a clinical perspective | <i>tbc</i> |
| 15.20 – 16.00 | Q&A + wrap up | All / Rob Tijssen |

In preparation of the course an online refresher day will be provided a few weeks in advance. During this day the basic principles of CT, MRI, and PET will be explained and additional (optional) reading will be provided for those who are interested. Practical details on the course and the peer-to-peer sessions on day one will also be given.

DAY 0 - Online refresher day (2nd week of January, tbc)

| Time | Lecture | Speaker |
|---------------|---|----------------------|
| 09.00 – 09.30 | Welcome and introduction | Rob Tijssen |
| 09.30 – 10.00 | Historical overview: what has imaging brought us so far ? | Cihan Gani |
| 09.30 – 10.10 | Basic CT physics | Christian Richter |
| 10.10 – 10.30 | <i>Coffee break</i> | |
| 10.30 – 11.10 | Basic CBCT physics | Rune Slot Thing |
| 11.10 – 11.50 | Basic PET physics | Kathrine Røe Redalen |
| 11.50 – 12.30 | Basic MRI physics | Rob Tijssen |
| 12.30 - 13.30 | <i>Lunch</i> | |
| 13.30 – 14.00 | Q&A | All |
| 14.00 – 14.30 | Peer-to-peer preparation & practical details | Rob Tijssen |