

## SCIENTIFIC PROGRAMME

### Course Directors:

Luca Boldrini  
Uulke van der Heide

### Faculty:

Simon Böke  
Faisal Mahmood  
Simeon Nill  
Stefanie Corradini  
Helen McNair  
Sebastian Klüter  
Stella Mook

## RECORDED LECTURES

### All participants:

#### **Block 1: Multi-disciplinary introduction. (2h20m)**

- Introduction: From IGRT to in-room MRI-Guided Radiotherapy, the technology perspective *by U. van der Heide - 27'09"*
- Introduction: From IGRT to in-room MRI-Guided Radiotherapy, the medical perspective *by L. Boldrini - duration unknown; assume 15-30'*
- Introduction: From IGRT to in-room MRI-Guided Radiotherapy, the RTT perspective *by H. McNair - 19'07"*
- MR-simulation and MR-guided Radiotherapy: common aspects and differences *by F. Mahmood - 38'34"*
- MRgRT and BRT *by Stefanie Corradini - 26'11"*

### All participants:

#### **Block 2: In-room MRI. (2h15m)**

- Hybrid MR-guided RT machines: Low field vs. high field *by S. Klüter - 51'09"*
- Clinical workflow of an in-room MRI-Guided Radiotherapy treatment *by L. Boldrini - 42'11"*
- In-room MR image processing and planning *by S. Nill - 41'38"*

### Physicists

#### **Block 3: MRI physics. (2h15m)**

- Artifacts in MRI: physics point of view *by F. Mahmood - 50'45"*
- Quality Control for MR in Radiotherapy *by U. van der Heide - 26'04"*
- Motion management with MRI gating *by S. Nill - 47'33"*

### Radiation Oncologists and RTTs

#### **Block 3: MRI-guided adaptive radiotherapy. (3h)**

- MR Physics: Basic Introduction *by U. van der Heide - 27'03"*
- Artifacts in MRI: clinical point of view *by F. Mahmood - 48'53"*
- Decision Making: when do adapt a treatment fraction? *by S. Mook - 35'*
- Immobilization devices and MR simulation in MR-guided RT *by H. McNair - 18'*
- Management of breathing motion in MR-guided RT *by S. Klüter - 49'46"*

## RTTs

### **Block 4: On-line treatment towards functional guidance. (2h15m)**

- Patient Positioning: Brain, Head and Neck, Thorax, Upper Abdomen and Pelvis *by H. McNair - 27'*
- Practicalities for patient management and workflow *by H. McNair - 31'08"*
- Basic principles of OARs contouring on MR *by L. Boldrini - 27'55"*
- Quantitative and functional imaging during MRI-guided Radiotherapy (RO/RTT) *by U. van der Heide - 41'*

## Physicists

### **Block 4: Handling the magnetic field, motion and biology . (3h30m)**

- Dosimetry in the presence of magnetic fields *by S. Klüter - 33'26"*
- Patient-specific QA in online adaptive MRgRT *by S. Klüter - 58'05"*
- Quantitative and functional imaging during MRI-guided Radiotherapy (MP) *by U. van der Heide - 44'29"*

## Radiation Oncologists

### **Block 4: Clinical on-line MRI-guided radiotherapy. (3h)**

- Clinical Indications for MR-guided Radiotherapy treatment *by C. Gani - 28'54"*
- Patient selection criteria and compliance assessment *by S. Mook - 28'*
- Clinical Experience in MR-guided Radiotherapy *by L. Boldrini and C. Gani - 32'14"+36'08"*
- Quantitative and functional imaging during MRI-guided Radiotherapy (RO/RTT) *by U. van der Heide - 41'*

## All participants:

### **Block 5: Wrap-up. (1h30m)**

- Online adaptive radiotherapy: workflow and criticalities *by S. Mook - 33'*
- RT and MR safety *by F. Mahmood - 37'36"*