



## Radiation Oncology Course 2019

### Biological, Physical and Clinical Aspects

The course provides an overview of (1) radiobiological and physical principles of radiation oncology (2) technical innovation in precision radiotherapy (3) the route of the radiotherapy patient - via diagnosis, imaging and treatment planning - to therapy.

Topics that will be addressed: effects of irradiation on the DNA and cellular level; radiation response of tumours and normal tissues; physics of modern conformal radiotherapy; imaging; treatment planning; fractionation and hypofractionation; particle irradiation; image-guided radiotherapy; brachytherapy; combination treatment with chemotherapy and targeted agents, hyperthermia and immunotherapy; treatment of breast cancer, lung cancer, gynaecological and head & neck tumours; quality of life and late effects. New and exciting developments in radiation oncology will be addressed. The course encompasses three practical trainings: (1) the radiobiology laboratory (2) computer-based target volume delineation (3) patient treatment simulation on a linear accelerator. In addition, three PhD students will be invited to give an overview about their research project.

Target audience: OOA PhD students, researchers and trainees in oncology with biological, clinical or physics background, having particular interest in the principles and therapeutic effects of radiation.

Date:	25 - 29 March 2019
Location:	NKI
Info + Registration:	<a href="http://www.ooa-graduateschool.org">www.ooa-graduateschool.org</a>
Registration deadline:	March 1st 2019
Organization:	Peter Sminia, Jan-Jakob Sonke, Lukas Stalpers



# Program

## Monday March 25:

9.30 - 10.00	Registration, Coffee & Tea	
10.00 - 10.30	Welcome, introduction, course overview	Peter Sminia (VUmc)
10.30 - 11.15	Hallmarks of Cancer / Cancer Biology	Przemek Krawczyk (AMC)
11.15 - 12.00	Stem cells in Radiotherapy	Rob Coppes (UMCG)
12.00 - 13.00	Free lunchtime	
13.00 - 13.45	Molecular Radiobiology	Lecture Room Z1 Arlene Oei (AMC)
13.45 - 14.30	Imaging	Lecture Room Z4 Erik-Jan Rijkhorst (NKI)
14.30 - 14.50	<i>Y-90 radioembolization: treatment of primary and secondary liver malignancies</i>	Ieva Kurilova (PhD NKI)
14.50 - 15.15	Coffee & Tea	
15.15 - 16.00	Cellular Radiobiology	Conchita Vens (NKI)
16.00 - 16.45	Introduction to Radiation Physics	Stan Heukelom (VUmc)

## Tuesday March 26:

9.00 - 9.45	Clinical Radiobiology	Lecture Room Z5 Monique de Jong (NKI)
9.45 - 10.30	Lung Cancer	José Belderbos (NKI)
10.30 - 11.00	Coffee & Tea	Lecture Room Z1
11.00 - 11.45	Treatment planning	Tomas Janssen (NKI)
11.45 - 12.30	Normal tissue Radiobiology	Peter Sminia (VUmc)
12.30 - 13.30	Free lunchtime	
13.30 - 14.15	Dictating the fate of a tumour cell by radiation therapy	René Medema (NKI)
14.15 - 15.00	Hyperthermia	Hans Crezee (AMC)
15.00 - 15.25	Coffee & Tea	
15.25 - 15.45	<i>Therapeutic drug monitoring of oral anticancer drugs</i>	Steffie Groenland (NKI)
15.45 - 16.30	Gynaecological cancer & HPV	Lukas Stalpers (AMC)

### Wednesday March 27:

### Lecture Room Z1

9.00 - 9.45	Image handling	Jan-Jakob Sonke (NKI)
9.45 - 10.30	Head and Neck cancer	Patricia Doornaert (UMCU)
10.30 - 11.00	Coffee & Tea - preparation of groups for practical trainings	
11.00 - 12.30	Practical trainings: 3 sessions, ~ 9 students / group	
	a. Tumour / Normal Tissue contouring - <a href="#">CO.139 (demoruimte 3 radiologie)</a> (Simon van Kranen)	
	b. Radiobiological experiment - <a href="#">Z1</a> (Conchita Vens, Arlene Oei, Artem Khmelinskii and Peter Sminia)	
	c. Patient treatment simulation on a LINAC - <a href="#">Gaarenstroomzaal D2.023+ LINAC</a> (Maddalena Rossi)	
12.30 - 13.30	Free lunchtime	
13.30 - 15.00	Practical trainings cont (see above: Group A tot 2 - Group B to 3 - group C to 1 )	
15.00 - 16.30	Practical trainings cont. (see above: Group A to 3 - Group B to 1 - Group C to 2)	
16.30 - 17.15	Drinks in <a href="#">Z1</a>	

### Thursday March 28:

### Lecture Room Z4

9.00 - 9.45	Breast cancer	Geertjan van Tienhoven (AMC)
9.45 - 10.30	Brachytherapy	Bradley Pieters (AMC)
10.30 - 11.00	Coffee & Tea	
11.00 - 11.45	Dose Painting	Uulke van der Heide (NKI)
11.45 - 12.30	Image Guided - & Adaptive RadioTherapy	Coen Rasch (LUMC)
12.30- 13.15	Free lunchtime	
13.15 – 14.00	Quality of Life	Lonneke van de Poll-Franse (NKI)
14.00 – 14.45	Late effects	Michael Schaapveld (NKI)
14.45- 15.10	Coffee & Tea	
15.10 - 15.30	<i>Toxicity prediction in radiotherapy for pelvic cancers</i>	Karin Nuijens (AMC)
15.30 - 16.15	SBRT, Hypofractionation	Max Dahele (VUmc)

### Friday March 29:

9.00 - 9.45 Targeted Radiotherapy  
9.45 -10.30 Pediatric Radiotherapy  
10.30- 11.00 Coffee & Tea  
11.00- 11.45 Radiotherapy and Immunotherapy  
11.45 - 12.30 Proton therapy  
12.30 - 13.30 Free lunchtime  
13.30 - 14.15 MRI guided radiotherapy  
14.15 - 15.00 Chemoradiation / novel drugs  
15.00 - 15.15 Coffee & Tea, Evaluation and closing

### Lecture Room Z4

Marcel Verheij (RadboudUMC)

Geert Janssens (UMCU/PMC)

Philip Lambin (MUMC)

Mischa Hoogeman (HPTC)

Suresh Senan (VUMc)

Anneke Westermann (AMC)

Course organizers