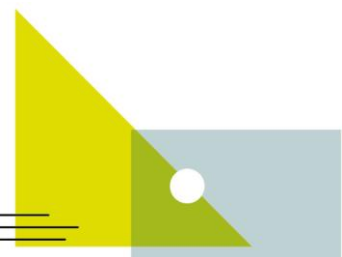


Implementation and Practice of Image-guided Stereotactic Body Radiotherapy

2021 online edition

Scientific Programme

2 November – 9 December 2021





Meet the faculty

Course directors

- Matthias Guckenberger, *Radiation Oncologist, University Hospital Zurich, Zurich (CH)*
- Dirk Verellen, *Medical Physicist, Iridium Kankernetwerk, University of Antwerp, Antwerp (BE)*

Teachers

- Coen Hurkmans, *Medical Physicist, Catharina Hospital, Eindhoven (NL)*
- Karin Dieckmann, *Radiation Oncologist, Medical University of Vienna, Vienna (AT)*
- Maria Hawkins, *Clinical Oncologist, University College London, London (UK)*
- Mischa S. Hoogeman, *Medical Physicist, Erasmus Medical Centre-Daniel den Hoed Cancer Centre, Rotterdam (NL)*
- Piet Dirix, *Radiation oncologist, Iridium Network, GZA Sint-Augustinus Department of Radiation Oncology, Antwerp (BE)*
- Piet Ost, *Radiation Oncologist, Ghent University, Ghent (BE)*
- Sophie Perryck, *RTT, University Hospital Zurich, Zurich (CH)*
- Stephanie Lang, *Medical Physicist, University Hospital Zurich, Zurich (CH)*
- Suresh Senan, *Radiation Oncologist, Amsterdam University Medical Centers, VUmc location, Amsterdam (NL)*

Guest Speakers

- Alison Tree, *Clinical Oncologist, Royal Marsden Hospital Trust & Institute of Cancer Research, London (UK)*
- Arjun Sahgal, *Radiation Oncologist, Sunnybrook Health Sciences Centre (CA)*
- Clifford Robinson, *Radiation Oncologist, Washington University School of Medicine in St. Louis, St. Louis (USA)*
- Egbert Smit, *Pulmonologist, Leiden University Medical Center, Amsterdam (NL)*
- Joanne van der Velden, *Radiation Oncologist, UMC Utrecht (NL)*
- Rob Tijssen, *Medical Physicist, Catharina Hospital, Eindhoven (NL)*
- Shankar Siva, *Radiation Oncologist, Peter MacCallum Cancer Centre, Melbourne (AU)*
- Stephanie Kroeze, *Radiation Oncologist, University Hospital Zurich (CH)*
- Wilko Verbakel, *Medical Physicist, Amsterdam UMC, Amsterdam (NL)*

Module 1: Clinical, technological and biological basis of SBRT

Clinical chair: Matthias Guckenberger (MG)

Physics chair: Dirk Verellen (DV)

Week 1: 2 – 4 November 2021

Guest speaker:

- **Stephanie Kroeze (SK)**



Pre-recorded
lectures

- Rec 1.1: What defines SBRT? – *Speaker MG (20 min)*
- Rec 1.2: Biology of high-dose per fraction SBRT – *Speaker MG (20 min)*
- Rec 1.3: Margin calculations for stereotactic treatments – *Speaker MSH (20 min)*
- Rec 1.4: ICRU91 on prescribing, recording and reporting of stereotactic treatments – *Speaker DV (20 min)*



Theoretical
session

Live class - Tuesday 2 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	MG	DV
17:10 – 17:15	Executive summary of Recorded Lectures 1.1 and 1.2	MG	DV
17:15 – 17:25	Q&A		
17:25 – 17:30	Executive summary of Recorded Lectures 1.3 and 1.4	DV	MG
17:30 – 17:40	Q&A		
17:40 – 18:00	Up-to-date lecture Clinical 1: Evidence-based indications for SBRT in current international guidelines	MG	DV
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture Clinical 2: Limitations of SBRT: toxicity of SBRT alone and in combination with systemic therapy	<i>Guest speaker: SK</i>	DV
18:25 – 18:30	Q&A		
18:30 – 18:50	Up-to-date lecture Physics 1: Technology for stereotactic treatments	CH	MG
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture Physics 2: Most recent recommendations on QA and treatment planning	DV	MG
19:15 – 19:25	Q&A and Wrap-up		



Practical session

Live class - Thursday 4 November 2021, 17:00 – 18:15 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction to the topic	MG	DV
17:05 – 17:25	Clinical Journal Club: ground-breaking publications from 2021	MG	DV
17:25 – 17:40	<i>Q&A and Discussion</i>		
17:40 – 18:00	Physics Journal Club: ground-breaking publications from 2021	DV	MG
18:00 – 18:15	<i>Q&A and Discussion</i>		

Module 2: SBRT for OMD

Clinical chair: Matthias Guckenberger (MG)

Physics chair: Stephanie Tanadini-Lang (STL)

RTT chair: Sophie Perryck (SP)

Week 2: 9 – 11 November 2021

Guest speaker:

- **Egbert Smit (ES)**



Pre-recorded lectures

- Rec 2.1: Definition and characterization of OMD – *Speaker MG (20 min)*
- Rec 2.2: Efficacy of SBRT as locally ablative Tx modality for OMD – *Speaker MG (20 min)*
- Rec 2.3: Errors and safety – *Speaker CH (20 min)*
- Rec 2.4: EQ2Gy in clinical practice – *Speaker STL (20 min)*

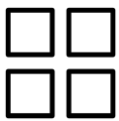


Theoretical session

Live class - Tuesday 9 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	MG	STL
17:10 – 17:15	Executive summary of Recorded Lectures 2.1 and 2.2	MG	STL
17:15 – 17:25	Q&A		
17:25 – 17:30	Executive summary of Recorded Lectures 2.3 and 2.4	STL	MG
17:30 – 17:40	Q&A		

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Parallel sessions

Live class - Tuesday 9 November 2021, 17:00 – 19:25 CET

17:40 – 19:25			
Parallel session – Clinical Up-to-date lectures – Chair MG			
Time	Lecture	Speaker	Moderator
17:40 – 18:00	Up-to-date lecture Clinical 1: Perspective of medical oncology	<i>Guest speaker</i> ES	MG
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture Clinical 2: Oligometastatic NSCLC	SS	MG
18:25 – 18:30	Q&A		
18:30 – 18:50	Up-to-date lecture Clinical 3: Oligometastatic Prostate Cancer	MG	SS
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture Clinical 4: Challenging situations in OMD management	MG & SS	MG & SS
19:15 – 19:25	<i>Q&A and Wrap-up</i>		
17:40 – 19:25			
Parallel session – Physics Up-to-date lectures – Chair STL			
Time	Lecture	Speaker	Moderator
17:40 – 18:00	Up-to-date lecture Physics 1: Deformable dose accumulation	MSH	STL
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture Physics 2: Treatment planning techniques for re-irradiation	STL	MSH
18:25 – 18:30	Q&A		
18:30 – 18:50	Up-to-date lecture Physics 3: Patient specific QA	CH	DV
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture Physics 4: Small field dosimetry	DV	CH
19:15 – 19:25	<i>Q&A and Wrap-up</i>		
17:40 – 19:25			
Parallel session – RTT Up-to-date lectures – Chair SP			
Time	Lecture	Speaker	Moderator
17:40 – 18:00	Up-to-date lecture RTT 1: Positioning and immobilization Introduction	SP	KD
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture RTT 2: Positioning and immobilization with motion management	SP	KD
18:25 – 18:30	Q&A		
18:30 – 18:50	Up-to-date lecture RTT 3: Positioning and immobilization without motion management	SP	KD
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture RTT 4: IGRT for Stereotactic treatments	SP	KD
19:15 – 19:25	<i>Q&A and Wrap-up</i>		



Practical session

Live class - Thursday 11 November 2021, 17:00 – 18:15 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction	MG	STL
17:05 – 17:25	Basic case presentation A-Z	MG/STL	MG/STL
17:25 – 17:40	Q&A		
17:40 – 18:00	Challenging case presentation A-Z	MG/STL	MG/STL
18:00 – 18:15	Q&A and Wrap-up		



Product Demo

Live demo - Thursday 11 November 2021, 18:15 – 18:45 CET

Time	Talk	Speaker	Company
18:15 – 18:45	Monaco Planning	M. Seithel	Elekta

Module 3: Spinal SBRT and SBRT for non-spine bone metastases

Clinical chair: Piet Dirix (PD)

Physics chair: Coen Hurkmans (CH)

Guest speakers:

Week 3: 16 – 18 November 2021

- Arjun Sahgal (AS)
- Joanne van der Velden (JvdV)



Pre-recorded lectures

- Rec 3.1: Overview multidisciplinary management of vertebral metastases – PD (20 min)
- Rec 3.2: Step-by-Step practice of SBRT for vertebral metastases – Guest speaker AS (20 min)
- Rec 3.3: Prescription and dose calculation in SBRT – Speaker CH (20 min)
- Rec 3.4: Historical overview on Stereotaxy – Speaker DV (20 min)

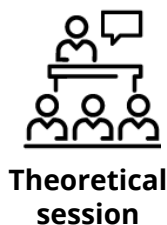


Theoretical session

Live class - Tuesday 16 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	PD	CH
17:10 – 17:15	Executive summary of Recorded Lectures 3.1 and 3.2	PD	CH
17:15 – 17:25	Q&A		

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Theoretical session

Live class - Tuesday 16 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
17:25 – 17:30	Executive summary of Recorded Lectures 3.3 and 3.4	CH	PD
17:30 – 17:40	Q&A		
17:40 – 18:00	Up-to-date lecture Clinical 1: Clinical evidence of bone SBRT: OMD, pain and MSCC	<i>Guest speaker JvdV</i>	PD
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture Clinical 2: Vertebral reirradiation, non-spine bone SBRT	PD	CH
18:25 – 18:30	Q&A		
18:30 – 18:50	Up-to-date lecture Physics 1: Patient setup and imaging	CH	PD
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture Physics 2: Treatment planning techniques for spine SBRT	STL	PD
19:15 – 19:25	<i>Q&A and Wrap-up</i>		



Practical session

Live class - Thursday 18 November 2021, 17:00 – 18:15 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction	PD	CH
17:05 – 17:25	Basic case presentation A-Z	PD/CH	PD/CH
17:25 – 17:40	<i>Q&A and Discussion</i>		
17:40 – 18:00	Challenging case presentation A-Z	PD/CH	PD/CH
18:00 – 18:15	<i>Q&A and Wrap-up</i>		

Module 4: SBRT for primary liver cancer and pancreatic cancer

Clinical chair: Maria Hawkins (MH)

Week 4: 23 – 25 November 2021

Physics chair: Mischa S. Hoogeman (MSH)



Pre-recorded lectures

- Rec 4.1: Overview of multidisciplinary management of primary liver cancer – *Speaker MH (20 min)*
- Rec 4.2: Overview of multidisciplinary management of primary pancreatic cancer – *Speakers MH/MSH (20 min)*
- Rec 4.3: Step-by-Step clinical practice of SBRT for liver and pancreatic cancer – *Speaker MH (20 min)*
- Rec 4.4: Treatment planning in liver and pancreatic cancer – *Speaker STL (20 min)*
- *Rec 4.5: Motion uncertainties in the treatment of liver and pancreatic cancer – Speaker MSH (20 min)*



Theoretical session

Live class - Tuesday 23 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	MH	MSH
17:10 – 17:15	Executive summary of Recorded Lectures 4.1 and 4.2	MH/MSH	MH/MSH
17:15 – 17:25	Q&A		
17:25 – 17:30	Executive summary of Recorded Lectures 4.3, 4.4 and 4.5	MH/MSH	MH/MSH
17:30 – 17:40	Q&A		
17:40 – 18:00	Up-to-date lecture Clinical 1: How to handle close proximity of GTV to luminal GI structures?	MH	MSH
18:00 – 18:05	Q&A		
18:05 – 18:25	Up-to-date lecture Clinical 2: Particle therapy in hepatobiliary cancers	MH	MSH
18:25 – 18:30	Q&A		

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Theoretical session

Live class - Tuesday 23 November 2021, 17:00 – 19:25 CET

Time	Lecture	Speaker	Moderator
18:30 – 18:50	Up-to-date lecture Physics 1: Image guidance for liver and pancreatic cancer	MSH	MH
18:50 – 18:55	Q&A		
18:55 – 19:15	Up-to-date lecture Physics 2: Online adaptation for liver and pancreatic cancer	MSH	MH
19:15 – 19:25	Q&A and Wrap-up		



Practical session

Live class - Thursday 25 November 2021, 17:00 – 18:15 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction	MH	MSH
17:05 – 17:25	Basic case presentation A-Z	MH/MSH	MH/MSH
17:25 – 17:40	Q&A and Discussion		
17:40 – 18:00	Challenging case presentation A-Z	MH/MSH	MH/MSH
18:00 – 18:15	Q&A and Wrap-up		

Module 5: Up-to-date week

Clinical chairs: Piet Ost (PO), Suresh Senan (SS), Karin Dieckmann (KD)

Physics chairs: Coen Hurkmans (CH), Dirk Verellen (DV), Mischa S. Hoogeman (MSH)

RTT chair: Sophie Perryck (SP)

Week 5: 30 Nov – 2 Dec 2021

Guest speakers:

- Alison Tree (AT)
- Rob Tijssen (RT)



Pre-recorded lectures

SBRT for early-stage NSCLC

- Rec 5.1: Indication and patient selection of SBRT for early-stage NSCLC – *Speaker SS (20 min)*
- Rec 5.2: Clinical best-practice of SBRT for early-stage NSCLC – *Speaker SS (20 min)*
- Rec 5.3: Motion and motion detection in lung SBRT – *Speaker MSH (20 min)*
- Rec 5.4: Motion management for lung SBRT – *Speaker DV (20 min)*



Pre-recorded lectures

SBRT for primary prostate cancer

- Rec 5.5: Clinical best-practice of SBRT for prostate cancer – *Guest speaker AT (20 min)*
- Rec 5.6: Uncertainties in prostate SBRT – *Speaker STL (20 min)*
- Rec 5.7: Margin calculations for prostate SBRT – *Speaker MSH (20 min)*



Pre-recorded lectures

SRS for brain metastases

- Rec 5.8: Overview of multidisciplinary management of brain metastases – *Speaker KD (20 min)*
- Rec 5.9: Clinical best practice of SRS for brain metastases – *Speaker KD (20 min)*
- Rec 5.10: QA and QA equipment – *Speaker DV (20 min)*
- Rec 5.11: End-to-end accuracy and patient QA for brainmets (including MR-CT match) – *Speaker CH (20 min)*

Live class - Tuesday 30 November 2021, 17:00 – 19:25 CET



Theoretical session

Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction to the topic	SS/PO	MSH/CH
17:05 – 17:15	Case presentation - NSCLC	SS	MSH
17:15 – 17:20	Q&A		

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Live class - Tuesday 30 November 2021, 17:00 – 19:25 CET

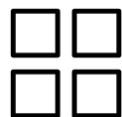


Theoretical session

Time	Lecture	Speaker	Moderator
17:20 – 17:40	Up-to-date lecture Clinical 1 - SBRT for early NSCLC	SS	MSH
17:40 – 17:45	Q&A		
17:45 – 18:05	Up-to-date lecture Physics 1 - SBRT for early NSCLC - Irradiation of multiple lesions	STL	SS
18:05 – 18:10	Q&A		
18:10 – 18:20	Case presentation - Prostate	PO	CH
18:20 – 18:25	Q&A		
18:25 – 18:45	Up-to-date lecture Clinical 2 - SBRT for primary prostate cancer	PO	CH
18:45 – 18:50	Q&A		
18:50 – 19:10	Up-to-date lecture Physics 2 - SBRT for primary prostate cancer - MR QA for SBRT and SRT	<i>Guest speaker: RT</i>	PO
19:10 – 19:25	<i>Q&A and Wrap-up</i>		



Practical session



Parallel sessions

Live class - Thursday 2 December 2021, 17:00 – 18:15 CET

17:00 – 18:15 Parallel session – Clinicians – Chair KD			
Time	Lecture	Speaker	Moderator
17:00 – 17:05	Introduction to the topic	KD	PO
17:05 – 17:15	Clinical case presentation	KD	PO
17:15 – 17:20	Q&A		
17:20 – 17:40	Up-to-date lecture Clinical 1 - SRS for brain metastases	KD	PO
17:40 – 17:45	Q&A		
17:45 – 18:05	Up-to-date lecture Clinical 2 - SRS for brain metastases	KD	PO
18:05 – 18:15	<i>Q&A and Wrap-up</i>		

17:00 – 18:15 Parallel session – Physicists – Chair DV			
Time	Lecture	Speaker	Moderator
17:00 – 17:15	Introduction to the topic	DV	MSH
17:15 – 18:15	Questions and open discussion		

17:00 – 18:15 Parallel session – RTTs – Chair SP			
Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	SP	STL
17:10 – 18:15	Questions and open discussion		

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Product Demo

Live demo - Thursday 2 December 2021, 18:15 – 18:45 CET

Time	Talk	Speaker	Company
18:15 – 18:45	Leksell Gamma Knife® Lightning	P. Mahendran	Elekta

Module 6: Emerging indications and technologies

Clinical chairs: Matthias Guckenberger (MG)

Physics chair: Dirk Verellen (DV)

Guest speakers:

Week 6: 7 – 9 December 2021

- **Shankar Siva (SSi)**
- **Wilko Verbakel (WV)**
- **Clifford Robinson (CR)**



Theoretical session

Live class - Tuesday 7 December 2021, 17:30 – 19:35 CET

Time	Lecture	Speaker	Moderator
17:30 – 17:45	Introduction to the topic	MG	DV
17:45 – 17:55	Q&A		
17:55 – 18:20	Emerging technology - Physics: AI for radiotherapy	DV	MG
18:20 – 18:30	Q&A		
18:30 – 18:55	Emerging technology - Clinical: AI for treatment planning	<i>Guest speaker WV</i>	MG
18:55 – 19:05	Q&A		
19:05 – 19:30	Emerging indication - SBRT for RCC	<i>Guest speaker SSi</i>	MG
19:30 – 19:35	Q&A and Wrap-up		



Practical session

Live class - Thursday 9 December 2021, 17:00 – 18:05 CET

Time	Lecture	Speaker	Moderator
17:00 – 17:10	Introduction to the topic	MG	DV
17:10 – 17:30	Hot topic: cardiac radiosurgery	<i>Guest speaker: CR</i>	MG
17:30 – 17:40	Q&A and Discussion		
17:40 – 18:00	Hot topic: FLASH radiotherapy	DV	MG
18:00 – 18:05	Q&A and Wrap-up		