

ESTRO 2025 – Physics Pre-meeting course

Impact of current (radio)biological knowledge on treatment choices in radiotherapy

Friday, 2 May 2025, from 08:30 to 17:00

Course directors:

- Marta Giżyńska, Medical Physicist, Noordwest Ziekenhuisgroep, The Netherlands
- Charlotte Robert, Medical Physicist, Gustave Roussy, France

Faculty:

- Loic Ah-Thiane, Radiation Oncologist, ICO Nantes, France
- Ane Appelt, Medical Physicist, University of Leeds, UK
- Eric Deutsch, Radiation Oncologist, Gustave Roussy, France
- Franziska Eckert, Radiation Oncologist / Radiation biologist, Medical University of Vienna, Austria
- Georgina Fröhlich, Medical Physicist, National Institute of Oncology, Hungary
- Johannes Langendijk, Radiation Oncologist, University Medical Center Groningen, The Netherlands
- Raphaël Moeckli, Medical Physicist, Lausanne University Hospital, Switzerland
- Yolanda Prezado, Medical Physicist, Universidad Santiago de Compostela, Spain
- Slavis Tubin, Radiation Oncologist, MedAustron, Romania
- Jan Unkelbach, Medical Physicist, University Hospital Zurich, Switzerland

Programme

| Time slot | Title | Teacher |
|----------------------|--|--------------------|
| 08:30 - 08:35 | Welcome | Course Directors |
| 08:35 - 12:30 | <i>Panel 1: Classical (radio)biological concepts and practical tools for medical physicists to apply them in the clinic</i> | |
| 08:35 - 09:00 | Mechanisms of radiation response - classical view | To be defined |
| 09:00 - 09:25 | Dose-response modeling | A. Appelt (UK) |
| 09:25 - 09:45 | Dose-response models as a tool for evidence-based RT | J. Langendijk (NL) |
| 09:45 - 10:05 | Radiobiology in clinical practice: challenges of hypofractionation | F. Eckert (AT) |

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| 10:05 - 10:30 | Radiobiology in clinical practice: unintended treatment interruptions | To be defined |
| 10:30 - 11:00 | <i>COFFEE BREAK</i> | |
| 11:00 - 11:15 | Radiobiology in clinical practice: plan evaluation and dose accumulation in the era of adaptive RT | M. Giżyńska (NL) |
| 11:15 - 11:35 | Radiobiology in clinical practice: charged particles | J. Unkelbach (CH) |
| 11:35 - 11:55 | Radiobiology in clinical practice: Dose summation for EBRT and Brachytherapy | G. Fröhlich (HU) |
| 11:55 - 12:10 | Radiobiology in clinical practice: Dose summation for EBRT and nuclear medicine | L. Ah-Thiane (FR) |
| 12:10 - 12:30 | Radiobiology in clinical practice: reirradiation | A. Appelt (UK) |
| 12:30 - 14:00 | <i>LUNCH BREAK</i> | |
| 14:00 - 16:55 | <i>Panel 2: Medical physics as a pathway for translating recent (radio)biological discoveries into innovative techniques and therapeutic strategies.</i> | |
| 14:00 - 14:25 | Mechanisms of radiation response - recent findings | To be defined |
| 14:25 - 14:50 | Immunomodulatory effects of RT | E. Deutsch (FR) |
| 14:50 - 15:10 | Immune system-sparing strategies | C. Robert (FR) |
| 15:10 - 15:30 | FLASH: why, when, and how | R. Moeckli (CH) |
| 15:30 - 16:00 | <i>COFFEE BREAK</i> | |
| 16:00 - 16:20 | Spatially fractionated RT: physician's perspective | S. Tubin (RO) |
| 16:20 - 16:40 | Spatially fractionated RT: physicist's perspective | Y. Prezado (ES) |
| 16:40 - 16:55 | Spatiotemporal therapy: why, when, and how | J. Unkelbach (CH) |
| 16:55 - 17:00 | <i>Wrap-up & closure</i> | Course Directors |

