



## LIPS Session 14

TMI&T + AI Committee

Wednesday, October 21, 09:45–11:15

### Session Title

**Multimodal Therapeutic Planning in Times of AI Innovations**

### Chairpersons

**Chadia Rizk** (Vienna, Austria)

**Thomas Wendler** (Augsburg, Germany)

### Programme

- 09:45–10:07 **Gerd Heilemann** (Vienna, Austria): Radiation therapy – how nuclear medicine imaging informs RT planning and what AI changes
- 10:07–10:29 **Emilie Roncali** (Davis, CA, United States of America): SIRT – AI-supported dosimetry and planning in radioembolisation
- 10:29–10:51 **John Orozco** (Valencia, Spain): Radioguided surgery – molecular imaging and AI in surgical planning
- 10:51–11:15 **Fijs van Leeuwen** (Leiden, Netherlands): Image-guided interventions – and the future of AI-driven therapeutic planning

### Educational Objectives

1. Explain how nuclear medicine and molecular imaging are integrated into therapeutic planning across radiation therapy, radioembolisation (SIRT), radioguided surgery and image-guided interventions.
2. Describe the current and emerging roles of AI-based methods in supporting, standardising and reshaping multimodal therapy planning.
3. Critically appraise the opportunities, limitations and translational challenges of AI-driven planning tools across these therapeutic disciplines.

### Summary

Artificial intelligence is rapidly changing how therapies are planned across disciplines, yet these developments are often discussed in isolation. This LIPS session brings radiation therapy, radioembolisation (SIRT), radioguided surgery and image-guided interventions together around a shared question: how does nuclear medicine and molecular imaging feed into therapeutic planning, and how are AI-based methods supporting or transforming that process? Through complementary clinical, physics and translational perspectives, participants will gain a practical, cross-disciplinary view of where AI adds value today and which challenges remain for routine clinical adoption.

### Key Words

Artificial Intelligence; Multimodal Therapy Planning; Molecular Imaging; Radiation Therapy; Radioembolisation (SIRT); Radioguided Surgery; Image-Guided Interventions