## Learn & Improve Professional Skills Session 1

Translational Molecular Imaging & Therapy Committee
**Sunday, October 5, 08:00 – 09:30**

## Session Title

**Optical and Multimodal/Hybrid Tracers: Similarities with Radiotracers, Pitfalls and Regulatoy Issues**

## Chairpersons

**Guisi Pisano** (Rome, Italy)
**Fijs van Leeuwen** (Leiden, Netherlands)

## Programme

08:00 – 08:25 **Guisi Pisano** (Rome, Italy): Can optical imaging replace radioguided surgery? – NM perspective
08:25 – 08:50 **Freddie Hamdy** (Oxford, United Kingdom): Surgeon's perspective – margins vs. lymph nodes
08:50 – 09:15 **Theresa Kahl** (Essen, Germany): PET tracers for surgical guidance, optical vs beta detection
09:15 – 09:30 **Fijs van Leeuwen** (Leiden, Netherlands): Placement of optical imaging within image-guided interventions

## Educational Objectives

1. Assess the clinical demand and possibilities for optical imaging technologies.
2. Understand the differences and similarities in tracer design between optical/hybrid tracers and radiotracers.
3. Evaluate the requirements and limitations of optical technologies in image-guided surgery applications.

## Summary

In many cases of cancer, surgery is the only curative treatment. Herein preoperative imaging performed at nuclear medicine serves as the golden standard for surgical planning. However, even when preoperative PET and or SPECT imaging is available, a surgeon mainly relies on visual and palpable feedback during surgery.

Optical imaging has been applied for decades in clinical practice were its aids in e.g. angiography. In recent years these approaches have been extended to other indications such as lymphatic mapping and receptor-targeted imaging approaches to improve visual feedback during surgery. As such, optical imaging is finding its way as a molecular imaging technology in image-guided interventions in a number of diseases and indications. However, the exact role and added value of optical imaging within molecular imaging/the field of nuclear medicine is not clearly defined.

In this session an outline is provided for the additional value and/or the place of optical imaging within the field of nuclear medicine. Special focus will be placed on:

- The similarities and differences in the design of optical/hybrid tracers and radiotracers.
- Different types of image guidance during image-guided surgery.
- Possibilities and pitfalls of optical imaging within clinical molecular imaging

**Key Words**
Optical imaging; Nuclear Medicine; molecular imaging; preoperative imaging; intraoperative imaging; image-guided surgery