**CME Session 11**
Radiopharmaceutical Sciences Committee
**Tuesday, October 22, 15:00 - 16:30**

**Session Title**
## Pre-Targeting Approach: Moving into Clinical Application, Utopia or Reality?

**Chairpersons**
**Matthias Herth** (Copenhagen, Denmark)
**Johanna Steen** (Amsterdam, Netherlands)

**Programme**

15:00 - 15:20 **Filipe Elvas** (Antwerp, Belgium): Basics of pre-targeting in Nuclear Medicine

15:20 - 15:40 **Matthias Herth** (Copenhagen, Denmark): From past to present

15:40 - 16:05 **Brian Zeglis** (New York, USA): Clinical perspective with strengths and limitations

16:05 - 16:30 **Anu Airaksinen** (Turki, Finland): Future generation of pre-targeted theranostics

**Educational Objectives**
1. To rationalize the advantages to use pretargeted strategies
2. To critically reflect the challenges arising from multistep procedures
3. To understand the parameters required for successfully applying pretargeting

**Summary**
Pretargeted nuclear imaging and radiotherapy have recently attracted increasing attention for diagnosis and treatment of cancer with nanomedicines. This is because it conceptually offers better imaging contrast and therapeutic efficiency while reducing the dose to radiosensitive tissues compared to conventional strategies. In conventional imaging and radiotherapy, a directly radiolabeled nano-sized vector is administered and allowed to accumulate in the tumor, typically on a timescale of several days. In contrast, pretargeting is based on a two-step approach. First, a tumor-accumulating vector carrying a tag is administered followed by injection of a fast clearing radiolabeled agent that rapidly recognizes the tag of the tumor-bound vector in vivo. Therefore, pretargeting circumvents the use of long-lived radionuclides that is a necessity for sufficient tumor accumulation and target-to-background ratios using conventional approaches.

**Key Words**
Pretargeted imaging and therapy; bioorthogonal chemistry; tetrazine ligation; in vivo click chemistry