Cancer Core Europe Lecture

Presented by Education & Training Task Force

SPEAKER

Dr Tiziana Rancati

**Medical physics researcher
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A Computational Framework for Personalized Modeling of the Vascular Microenvironment to Predict Radiotherapy Outcomes in Head-&-Neck Cancer

Date: Friday January 24 – **Time:** 14:00 CET

Link to Webex

This lecture explores the integration of clinical data with advanced biophysical models for microcirculation, presenting a framework that enables the creation of digital twins. These digital representations facilitate a bidirectional interaction between the model and the actual patient, offering a valuable tool for precision medicine.

By modeling the microvasculature of individual patients, this approach allows for detailed analysis of the microvascular environment and provides a platform for forecasting personalized radiotherapy outcomes.

Key aspects of the lecture include:
- The fundamental components of a biophysical model for microcirculation
- Methods for data collection and analysis to digitally represent patient-specific microvasculature
- Strategies for building personalized microvascular models

This framework highlights the potential of merging biophysical modeling with clinical data to advance patient-specific therapeutic strategies.

Dr Tiziana Rancati, is a researcher at the Computational Modelling for Oncology Needs (CMON) Lab within the Data Science Unit. Her work centres on outcome modelling and data integration, with a focus on developing multidisciplinary approaches that combine mathematics, physics, biology, computational sciences, and engineering to help advancing personalised radiotherapy.

Hosted by:

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