



**RESEARCH TOPIC MECM\_34**  
**Unraveling determinants of pancreatic cancer progression**

**Curriculum**

MECM Standard

**Research Area**

Gastro - Onco

**Laboratory name**

Plasticity, Fibrosis and Cancer Lab  
Ligorio Lab, UT Southwestern, Dallas (USA)

**Research Supervisor**

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Prof. Matteo Ligorio (UT Southwestern, Dallas, US)

**Abstract**

Pancreatic cancer remains one of the deadliest malignancies worldwide, largely due to late diagnosis, aggressive biological behavior, and limited therapeutic options. Tumor progression is driven by a complex interplay of genetic, microenvironmental, and structural factors that influence invasion, dissemination, and resistance to treatment. Among these, macrovascular infiltration represents a major determinant of disease aggressiveness and clinical outcome, often limiting surgical resectability and worsening prognosis. In parallel, the configuration of tissue architecture reflects tumor organization and stromal interactions, which may contribute to cancer progression and metastatic potential. The proposed project aims to investigate key determinants of pancreatic cancer progression, with particular focus on macrovascular infiltration and tissue architectural patterns, to improve the understanding of tumor biology and identify clinically relevant markers associated with disease evolution.

The research topic is organized as a co-tutelle programme in collaboration with the Ligorio Lab at UT Southwestern Medical Center. The programme includes a mandatory international research period abroad at the host institution in Texas (USA).

**Main technical approaches**

Cellular and molecular biology, histology, handling and processing of human samples, in vivo mouse models



### **Scientific references**

1. Stoop et al Lancet 2025 [PMID: 40187844]
2. Newcomer et al. Nat Med 2025 [PMID: 41102560]
3. Khorana et al Nat Rev Dis Primers [PMID: 35177631]
4. Gasper et al bioRxiv 2025 [PMID: 40832242]

### **Type of contract**

Scholarship of € 24.500 gross per year awarded by Istituto Clinico Humanitas. This sum is subject to IRPEF income tax and exempt from social security contributions.

Borsa di studio pari a € 24.500 annui lordi erogata da Istituto Clinico Humanitas. Importo soggetto a tassazione IRPEF ed esente da contribuzione previdenziale.