Research Overview-Erez Lab

The main goal of our laboratory is to uncover pathways that contribute to tumor progression and metastasis.

Tumors are more than just cancer cells: stromal cells in the tumor microenvironment play a crucial role in all stages of tumor initiation and progression, and metastatic relapse. Cancer research in recent years is no longer focused only on the pathways inside tumor cells, but rather on understanding the biology of tumors as multi-cellular organs.

The major cause of cancer mortality is metastasis to distant organs. Currently, metastatic cancers are mostly incurable and available therapies can only prolong life to a limited extent. Therefore, **uncovering the mechanisms that facilitate metastasis is an urgent and unmet clinical need**. There is a growing understanding that the metastatic microenvironment is crucial in enabling the growth of disseminated cancer cells. Nevertheless, changes in the metastatic microenvironment that enable the growth of metastasizing tumor cells are poorly characterized, and our research is focused on elucidating them.

We combine state-of-the-art transgenic mouse models with gene expression profiling, intra-vital imaging, ex-vivo models and pre-clinical functional approaches to reveal the molecular events at the metastatic microenvironment that create a hospitable niche for metastatic growth.