The immune system has been sculpted by evolution to constitute a natural host defence mechanism to life-threatening insults. Although mainly studied in the context of infectious diseases, it is now preceded that the immune system can detect and eradicate malignant cells thus inhibiting cancer formation. Remarkably, immunotherapies have dramatically improved clinical outcomes in cancer patients. Nevertheless, there is significant heterogeneity in response rates and durable clinical benefits are limited to a small subset of patients. Resistance to immunotherapies is often attributed to blunted immune cell reactivity against cancer. Therefore, deciphering the mechanisms that govern effective cancer immunity is of paramount importance to improve immunotherapy and overcome resistance.

We have previously identified natural effector molecules of mammalian host physiology that inhibit cancer immunity by thwarting the ability of the immune system to respond to signals from dying cancer cells (Giampazolias et al. 2017, Giampazolias et al. 2021) and commensal microbes (Giampazolias et al. in preparation).

The Cancer Immunosurveillance lab aims to understand cancer immunity in an interdisciplinary manner as the interplay between local and systemic tumour-host interactions. The aim of this project is to characterise the mechanisms that enable the immune system to recognise and respond to cancer through sensing and integration of cues that are elicited by dying cells and commensal microbes. The successful candidate will be trained in state-of-the-art facilities in the use of in vivo animal models, cell engineering and cell analysis techniques (flow cytometry and microscopy). We welcome talented graduates with enthusiasm for scientific research into the fundamental principles of cancer immunity.

University of Manchester entry: April or September 2023