

HUANG Paul EOI 2022 – ICR

Project title: Developing integrative biomarkers for improving neoadjuvant therapy in high-risk soft tissue sarcoma

Project Summary:

Soft tissue sarcomas (STS) are a group of uncommon mesenchymal cancers for which surgery is the standard treatment for localised disease. Despite optimal management of localised disease, ~50% of patients develop local and distant metastatic relapse leading to poor outcomes. Neoadjuvant chemotherapy (NCT) offers the potential to improve long-term survival but the lack of biomarkers to predict NCT response is a major unmet need and a key barrier to improving cure rates in high-risk STS. Leveraging on a collaboration between the Division of Molecular Pathology, the Centre for Evolution and Cancer at the ICR and the Sarcoma Unit at the Royal Marsden (RM), this multidisciplinary project seeks to utilise integrative multi-omic profiling to identify biomarkers to improve precision NCT in these diseases. In this project, the successful candidate will undertake molecular profiling analysis (e.g. transcriptomics, proteomics, spatial and single cell profiling) of serial pre- and post-NCT tissue from the RM and a network of national/international high volume tertiary sarcoma centres (Birmingham, Glasgow, Milan and Seville) to investigate the dynamic evolution of STS tumours and the biological processes impacting response to NCT. By integrating molecular profiling data with digital pathology and radiomics, this project has the potential to discover next generation predictive biomarkers for NCT response. The outcomes of this project will fuel potentially practice changing discoveries and new therapies to achieve the goal of delivering an individualised approach to the management of high-risk STS. The successful candidate will be jointly supervised by Dr Paul Huang (Team Leader, Division of Molecular Pathology and Centre for Evolution and Cancer, ICR) and Prof Robin Jones (Head, Royal Marsden Sarcoma Unit and Consultant Medical Oncologist).

Supervisory Team:

- Dr Paul Huang, Molecular Pathology, Institute of Cancer Research
- Professor Robin Jones, Institute of Cancer Research

Clinical Specialities: All clinical specialities are welcome to apply