

KEYNOTE TALK

Monday, October 11, 2021 at 1:30pm

Population genomic approaches for molecular biomarker discovery in clinical Oncology

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Abstract: Recent characterization of the genes recurrently mutated in cancer have led to the routine implementation of tumor profiling at diagnosis with the expectation to diagnose and treat patients according to their unique molecular profile - the vision of precision medicine. However, development of molecularly guided clinical decision support tools warrants the delivery of evidence based, data driven, comprehensive models that extend beyond single markers. In my talk I will discuss critical considerations for biomarker characterization, statistical model development, and clinical decision support tool development for clinical adoption.



Speaker Bio-Sketch: Dr. Papaemmanuil got her BSc and MSci in Human Molecular Genetics with Honors at the University of Glasgow and her PhD in Human population genetics at the Institute of Cancer Research in London. She performed her postdoctoral studies at the Wellcome Trust Sanger Center and joined the University of Cambridge as faculty, prior to moving to the Memorial Sloan Kettering Cancer Center. Dr. Papaemmanuil has employed genome profiling methodologies to study the role of acquired mutations in cancer development and how these determine clinical phenotype and response to therapy. More recently she has established high-throughput laboratory profiling approaches and developed statistical modelling methodologies that integrate clinical and molecular parameters to inform patient tailored disease classification and clinical decision support (prognosis and treatment decisions). Her main

research motivation is to develop research that helps translate recent cancer genome discoveries into clinical practice. Her current research spans, bioinformatic and algorithmic platform development, biomarker discovery and validation and experimental models of disease biology. Additionally, Dr. Papaemmanuil has a strong interest to understand the effects of treatment in disease progression and genetic drivers of treatment response. Dr. Papaemmanuil leads the Pediatrics Precision medicine initiative for MSK Kids, which sets out to evaluate, validate and deliver a clinical prototype for integrative whole genome and whole transcriptome sequencing analyses to understand mechanisms of disease biology and guide treatment strategies in pediatric cancers.