

## 2<sup>nd</sup> International Conference on **Hematology & Blood Disorders**

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### **Whole genome methodology for *in silico* quantification of intratumor heterogeneity: Model for clinical applications in the treatment of patients with hematological malignancies**

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The genomic revolution provides an unprecedented opportunity to revolutionize cancer treatment, however our current approaches cannot fully capitalize on the latest scientific discoveries. Conventional treatment ignores the fundamental lesson of genomics-that every cancer is different. There are many challenges of scientific and technical nature. Elucidating the general operating mechanisms of cancer requires tools for converting the results of omic testing into candidate networks and monitoring of how these networks respond and evolve with treatment overtime, pointing to candidate vulnerabilities. A profile of a patient's genetic make up can guide the selection of drugs or treatment protocols that ensure targeted, successful outcome and minimize harmful side effects. In addition intratumor heterogeneity constitutes a fundamental mechanism in drug resistant recurrences of malignant neoplasms. Third Gen Sequencing technologies provide the necessary throughput, precision, and depth to allow for true whole genome profiling of complex mutomes. An *in silico* methodology to quantify and visualize sub-clonal heterogeneity in aggressive tumors through massively parallel processing, real-time 3D rendering, and cognitive computation have been set and described. Our novel comprehensive service platform provides an analytical turnaround within a clinically relevant time frame to facilitate diagnostic, therapeutic and prognostic guidance to oncologists. Hematological malignancies are paradigms for pioneering the use and the benefits of this platform with consequent applications in the wider field of oncology.

#### **Biography**

Effie Liakopoulou is a physician scientist, specialist in Hematology Stem Cell Transplantation with particular interests in Hematological Oncology, Cell Therapies and Personalized Medicine. She holds MD and PhD degrees and a Certificate in Medical Management. She has 21 years of international experience and sound knowledge of the landscape in science, research and technology on clinical, medical and regulatory matters. Since 2006 she has served as inspector for the Joint Accreditation Committee - International Society for Cellular Therapy & European Group for Blood and Marrow Transplantation performing audits and due diligence of clinical, laboratory, research and specialist stem cell facilities. She is a member of several international professional organizations, and in 2009 she was elected Fellow of the Royal College of Pathologists, UK, in recognition of her contributions to the field of Hematology. She has co-authored several peer-reviewed publications and articles. Currently, she is an Affiliate Faculty Member in Hematology at, UW Medicine and Senior Research role for Retroscreen LTD. She is leading the coordination of due diligence in the academic, biotechnology and pharmaceutical arenas for technologies and fostering alliances for the advancement of Cancer therapies, Medicine and Health care as a whole.

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