The last decade has been a paradigm shift in instrument design of flow cytometers enabling analysis of 6, 8 or more colours simultaneously. Together with the development of new fluorochromes and antibody conjugates, scientists now have a new level of choice and control in designing robust assays that can detect and monitor multiple analytes to produce a tremendous amount of data while conserving sample. However, data quality in such experiments depends greatly upon proper antibody panel design and optimization of instrument setup. The complexities of choosing antibody combinations are such that simply using a random combination of fluorochromes for a particular set of antibody specificities is unlikely to provide optimal results. Spectral overlap between various fluorochromes, and its correction through compensation, results in undesirable background signal and data spread that can mar the sensitivity and resolution of a given fluorescence channel.

The aim of this workshop is to provide guidelines to aid in the design of reagent panels for multicolour flow cytometric immunophenotyping and discuss emerging concepts on instrument setup and standardization in a multicolour setting. An eight-colour panel for human lymphocyte immunophenotyping will be used as an example in the practical sessions.