

Experiments in genomics and proteomics

Wednesday July 23rd, 2008.

This will be four one-hour sessions by Terry Speed, James Brenton, Julian Griffin and Andy Lynch.

Session 1 (TP Speed)

Introduction and elementary overview of experiments in genomics and proteomics. For most experiments in this area, we can recognize three main phases that are relevant to experimental design. I: choice and preparation of experimental material, choice of platform technology; II: assignment of experimental reagents to components of the technology; III: actual conduct of the experiment, including times, places and conditions of experiment, and protocols, reagents, operators and equipment used. In this session we will mainly focus on examples where the experiments were poorly designed and led to unsatisfactory outcomes. This will show the need for good design.

Session 2 (JD Brenton)

This session will describe the science and technology of experiments in genomics from the viewpoint of a principal investigator.

Session 3 (JL Griffin)

This session will describe the science and technology of experiments in proteomics and metabolomics from the viewpoint of a principal investigator.

Session 4 (AG Lynch)

In this final introductory session, we will turn to specifics, here of the Illumina BeadArray platform, and set the scene for discussions later on in the workshop. After a brief description of the platform, key issues such as platform choice, the role of replication, randomisation and local control, validation, optimality and robustness will be discussed.