VI. Functional Genomics
Duration: One day
Type: Practical (lectures and hands on)
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This tutorial will be structured in the following way:

• Introductory Lecture on Functional Genomics: from microarrays to HTS.
• Interactive Section: An interactive walk through the key web pages from ArrayExpress Archive, the Gene Expression Atlas, Reactome and other related resources and tools.
• Hands-on Section: Problem-solving exercises where participants have to use the resources covered for answering the questions posed.
• Round discussion: to allow participants to put forwards their own question and discuss how such resources could help and which are the limitations of these resources.

By the end of this tutorial, participants will have learned:

-Which functional genomics resources are freely available, with emphasis on ArrayExpress, a public archive for well-annotated functional genomics data derived from microarray and high throughput sequencing (HTS) based experiments, and the Expression Atlas, a database which provides information about gene expression in different biological conditions.
-How to browse, interpret and retrieve data from these two databases.
-To navigate the Reactome database, a curated database of pathways and reactions in human biology.
-To use various Reactome tools to visualize pathways, perform pathway over-representation analysis and compare predicted pathways across species.