Differential protein binding to DNA using ChIP-Seq data and the Galaxy platform

Course description:

This course covers topics regarding experimental design of ChIP-Seq experiments, introduction, and considerations for NGS sequencing, hands on sessions to get from raw sequencing data to peaks using the Galaxy platform [1], QCs, sample visualizations and the statistical analyses of differential protein binding to DNA using R and the DiffBind package [2]. You will create an integrated report using RStudio and R Markdown [3] and have the opportunity to analyze your own data or a published dataset of interest.

References
[1] galaxyproject.org
[2] Ross-Innes CS et al. (2012). Differential estrogen receptor binding is associated with clinical outcome in breast cancer. Nature, 481(7381): 389–393. dx.doi.org/10.1038/nature10730
[3] rstudio.com, https://rmarkdown.rstudio.com

Topics:

- Fundamentals of ChIP-Seq analysis
- Processing of ChIP-Seq data using Galaxy
- Visualization of sequencing data and analysis of ChIP-Seq data with DiffBind
- Integrated ChIP-Seq data analysis with R and RStudio

Methods:

Video presentations, self-study exercises, Q&A sessions

Format:

- Mode: Online video course for self-study with Q&A sessions
- Duration: 2 days (without time limit)
- Language: English

Requirements:

Introduction to R and RMarkdown or equivalent courses/experience

Dates and Application:

You can view the current dates and register for this course on CaMS.