CENTRE FOR GENOME ENABLED BIOLOGY AND MEDICINE
University of Aberdeen

Advanced RNA Sequencing (RNA-seq) Analysis

Using Galaxy and the Command Line

Date: 9 am – 4 pm, Tuesday 24th January 2017

Location: MR117, MacRobert Building, University of Aberdeen, Old Aberdeen Campus.

Format: Instructor led computer based tutorial with support demonstrators.

Instructor: CGEBM Bioinformaticians (Eduardo de Paiva Alves, Antonio Ribeiro and Sophie Shaw)

Description: Using next generation sequencing of RNA to uncover gene expression patterns is now commonly used with a wide variety of organisms. However a list of differentially expressed genes is not the end point of the analysis. This workshop aims to introduce visualisation techniques for your results, downstream functional analysis and more complex statistical models. This workshop will utilise both R and Galaxy.

Topics:

- Complex statistical models such as generalised linear models.

- Visualisation of results using R and RStudio.

- Functional interpretations with Gene Ontology analysis and KEGG pathway analysis.

Who should attend: This workshop is aimed at researchers, staff and PhD students, interested in RNA sequencing and differential expression analysis. The aim of the workshop is to introduce downstream analyses once a differentially expressed gene list has been obtained. The keys steps of alignment and quantification of RNA sequencing data for production of a list of differentially expressed genes will not be covered. If you are interested in these topics you should attend the RNA Sequencing and Differential Gene Expression workshop.

Pre-requisites: Introduction to HPC Maxwell, the University of Aberdeen Computing Cluster and Basic Unix Skills workshops or alternative experience with the command line and Maxwell.

A Maxwell account is needed. We are providing teaching accounts for all participants to use for the duration of the workshop. However if you would like to use Maxwell after the workshop you will need to obtain an account. For more details see http://www.abdn.ac.uk/staffnet/working-here/hpc.php. If you already have a Maxwell account you are welcome to use that.

You will need to have attended the RNA Sequencing and Differential Expression workshop, or have a firm understanding of these concepts and analysis processes.

Closing Date for registrations: 16/01/2016 or when capacity is reached.

Closing Date for cancellations: 20/01/2016. Full course fee will be charged for cancellations after this date.

Cost: For University of Aberdeen staff and PhD students the workshop is £50. Details on how to complete payment are provided on the registration form.

For external delegates from academic institutions the workshop fee is £125. Please contact Sophie Shaw (s.shaw@abdn.ac.uk) for details on commercial rates.

Registrations: To register please follow the relevant link at http://www.abdn.ac.uk/genomics/bioinformatics/training/ and complete the registration form.

Further Information: Please contact Sophie Shaw (s.shaw@abdn.ac.uk)