

Alignment, Visualisation and Variant Calling

Using Galaxy and the Command Line

Date: 9 am – 5 pm, Wednesday 21st March 2018

Location: G21, Zoology Building, University of Aberdeen, Old Aberdeen Campus.

Format: Instructor led computer based tutorial with support demonstrators.

Instructor: CGEBM Bioinformaticians (Antonio Ribeiro and Sophie Shaw)

Description: The availability of sequenced reference genomes for a large number of species has led to an increase in research that investigates variation in isolates and individuals that could be linked to phenotypic changes. This workshop will work through the key steps involved in the process of taking sequencing data and analysing it to give a list of polymorphisms and the genes associated with these changes. We will utilise both Galaxy and the command line to achieve this.

Topics:

- Aligning Reads to a Reference Genome.
- Visualising Alignments.
- Variant Calling.
- Filtering of Variant Calling Results

Who should attend: This workshop is aimed at researchers, staff and PhD students, interested in resequencing of individuals to identify variants. The aim of the workshop is to demonstrate the keys steps involved in this analysis. Quality control and filtering of raw reads will not be covered. Examples of biological interpretations will be shown but detailed steps of these processes will not be covered.

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.

Closing Date for registrations: 14/03/2017 or when capacity is reached.

Closing Date for cancellations: 18/03/2017. Full course fee will be charged for cancellations after this date.

Cost: For University of Aberdeen staff and PhD students the workshop is £80. Details on how to complete payment are provided on the registration form.

For external delegates from academic institutions the workshop fee is £150. 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)

NOTE! This workshop will only run if a minimum number of attendees register. In circumstances of cancellation, full refunds will be given.