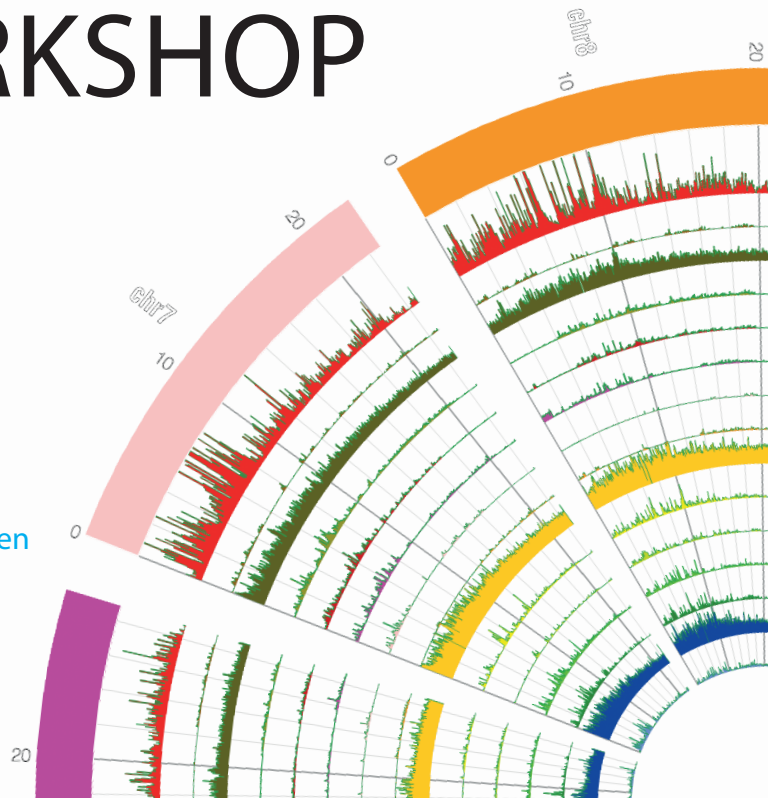# IGA
## TECHNOLOGY SERVICES

# NGS TRAINING WORKSHOP

**Data Crunching:**
**from hell to heaven**

Next Generation Sequencing (NGS) has recently revolutionized the approach to genomic studies enabling the sequencing of billions of bases in massively parallel reactions. These new sequencing technologies collectively referred to as "ultra-deep" sequencing or "massively parallel" sequencing are currently used for SNP discovery, detection of structural variants, genome-wide measurement of transcripts levels and a number of other applications, and are revolutionizing biological research.

# THE COURSE

This practical course is organized by Istituto di Genomica Applicata and IGA Technology Services and is addressed to researchers with a background in biology willing to perform basic analysis on next generation sequencing data analysis.
Each topic will consist of frontal introduction and practical work to enable participants to familiarize with the tools and the Unix enviroment. Hands-on work will be performed by simulating a real analysis on data generated by an Illumina platform.
The declared aim of the course is to enable attendees to become self-sufficient in basic NGS data analysis.

The course is limited to a maximum of 20 participants.

Applicants will be required to write a letter containing a 300-words outline describing the relevance of the course to their research.

# IGA
## TECHNOLOGY SERVICES

# THE PROGRAM

### Introduction to LINUX command line
- General introduction to LINUX operating system
- Learning to work: basic LINUX commands
- Use of shell scripts to perform basic tasks

### NGS data analysis
- Introduction to NGS data formats
- Data cleaning and quality control
- Get summary statistics before alignment
- Aligning  NGS data to a reference
- Get summary statistics after alignment
- SNP calling
- Tools for viewing SNPs
- Analysis of RNA-seq data
- De-novo assembly

# VENUE

The course takes place at:

Polo Scientifico Universitario
Via delle Scienze 208
33100 Udine

# HOW
# TO
# ARRIVE

Udine is located in Friuli Venezia Giulia region, in the North East of Italy. Udine is about 140 km far from Venice, and 80 km from Trieste and is easily accessible from the airports of:

Trieste www.aeroporto.fvg.it
Venice  www.veniceairport.it
Treviso  www.trevisoairport.it

For any information about the train connection please visit
www.trenitalia.com.

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