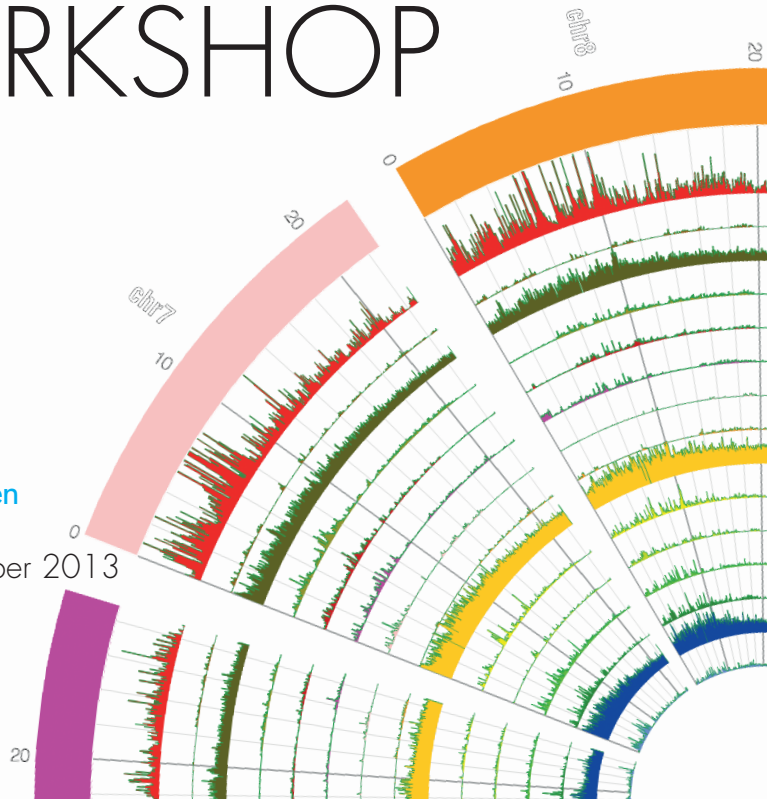


# NGS TRAINING WORKSHOP

Data Crunching:  
from hell to heaven

17 > 20 September 2013



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 environment. 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 will start on 17th September 2013 at 2.30 p.m. and will end on 20th September at 12.30 p.m.

# 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

# VENUE

The course takes place at:

Polo Scientifico Universitario  
Via delle Scienze 208  
33100 Udine

Parco Scientifico e Tecnologico L. Danieli  
Via J. Linussio 51 Z.I.U.  
3100 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](http://www.aeroporto.fvg.it)  
Venice [www.veniceairport.it](http://www.veniceairport.it)  
Treviso [www.trevisoairport.it](http://www.trevisoairport.it)

For any information about the train connection please visit [www.trenitalia.com](http://www.trenitalia.com).



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