



PROF. G.M. REDDY RESEARCH FOUNDATION

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Prof. G.M. Reddy Research Foundation (G.M.R.R.F) is a non-profit autonomous Research Organization registered in December 1995 by the Government of Andhra Pradesh and recognized by Department of Scientific and Industrial Research (DSIR), Department of Science and Technology, Govt. of India, New Delhi in August, 1997. Apart from research, the organization also encourages and supports the upcoming Scientists and budding Entrepreneurs in educating with the following technical skills. The organization works on the motto of KNOW HOW, TECHNOLOGY and KNOWLEDGE TRANSFER.

Next Generation Sequencing (NGS) Data Analysis Course

LINUX BASICS

Introduction to Linux (ubuntu)
Introduction to Linux and shell
Introduction to installing packages in Linux

NGS BASICS

Next Generation sequencing technologies and methods.
NGS Platforms for sequencing based on pyrosequencing, sequencing by synthesis, emulsion PCR approach with small magnetic beads and single molecule real time (SMRT) sequencing.

NGS DATA ANALYSIS

GENOME DATA ANALYSIS:

Introduction to next generation sequencing
Introduction of sequencing data/ Raw sequence files and data formats (FASTQ format)
Pre-processing of raw reads: quality control (FastQC, Cut Adapt)

Mapping: De-novo and Reference based read mapping (CLC, A5 miseq, BOWTIE)

Mapping outputs and conversions of formats (SAM/BAM format, SAM tools)

Mapping statistics and analysing the mapping outputs.

Consensus generation and viewing (SAM tools and BAMVIEW)

Visualization of mapped reads (IGV, UCSC GENOME BROWSER)

DNA variant calling and filtering DNA variants (SNPeff)

Genome annotation and Gene prediction (RAST, BaSYS)

TRANSCRIPTOME DATA ANALYSIS:

Quality check & filtering (FastQC, Cut Adapt)

Mapping: De-novo and Reference based read mapping (VELVETH AND OASIS, TOPHAT, CUFFLINKS)

Transcriptome assembly and alignment statistics (TRINITY)

Mapping outputs and conversions of formats (SAM/BAM format, SAM tools)

Viewing Transcriptome assembly (BAMVIEW, IGV, UCSC GENOME BROWSER)

Annotation and Gene Ontology (BLASTX, BLAST2GO)

Course duration: 1 month.

Registration : Open till April 30th 2017. Batch starts from May 1st 2017

Contact us: Please write to us at info@gmrrf.org or dial us at +91 9063920123.