

WEDNESDAY, MARCH -2-2016					
SCIENTIFIC TALKS					
Day	Time	Topic	Title	Speaker	
1	2:00-2:30 pm	Registration of participants			
	2:30-5:00 pm	Application of Next Generation Sequencing, Lecture Series	Inaugural Talk	Dr. Rajesh S. Gokhale	
			Sequencing to Functional Annotation	Dr. Mitali Mukerji	
			Personal Genome to Precision Medicine	Dr. Sridhar Sivasubbu	
			Short stories on long non-coding RNA	Dr. Vinod Scaria	
		NGS in non-Genomic Applications	Dr. Kausik Chakraborty		
THURSDAY, MARCH 03-2016					
GENOME/EXOME SEQUENCE ANALYSIS					
Day	Time	Topic	Title	Speaker	
2	9:00-9:30am	SCIENTIFIC CASE STUDY LECTURES	NGS Experimental design: Do's & Don't	Dr. Rajesh Pandey	
	9:30-11:00 am	DATA FORMATS AND QUALITY CHECK	NGS data formats, Optimal parameters for filtering	Dr. Debasis Dash, Dhvani	
			Data filtering/trimming		
			Data status before and after filtering		
	Tea break [30mins]				
	11:30-1:00 pm	ALIGNMENT AND POST-ALIGNMENT PROCESSING	Choice of aligner, optimizing parameters	Tahseen, Vijeta, Dhvani	
			Post alignment processing		
	Lunch break [1hr]				
	2:00-3:30 pm	VARIANT CALLING	Variant Calling and Filtering	Kiran, Gourja, Ankita	
	Tea break [30mins]				
4:00-5:30 pm	ANNOTATION AND VISUALIZATION	Variant Annotation and Data Resources	Kiran, Ankita		
5:30-6:00 pm		Data Visualization			
6:00-6:30 pm	ADVANCED SESSION	Discussion on Pipelines for handling multiple samples	Vijeta Manchanda		
FRIDAY, MARCH 04-2016					
TRANSCRIPTOME ANALYSIS(RNA seq/sRNA seq)					
Day	Time	Topic	Title	Speaker	
3	9:00 - 9:30 am	SCIENTIFIC CASE STUDY LECTURES	small RNA sequencing led discoveries micro RNA biology	Dr. Ravi Shankar	
	9:30-10:30 am	DESIGNING RNAseq EXPERIMENTAL STUDY	Detailed experimental design	Kiran Narta	
	Tea break [30mins]				
	11:00 -12:00 noon	INTRODUCTION TO RNAseq DATA	Introduction, About public data repository: GEO, SRA toolkit	Shambhavi Shankrit	
			FastQC		
		QUALITY CHECK	Using Trimmomatic for Quality Control		
	12:00 - 1.30 pm	ALIGNMENT OF READS	Introduction to alignment [splice aligner] , Introduction to STAR and Tophat , Fetching Genomic resources and Indexing, Alignment using STAR , Explanation of output files	Parashar Dhapola	
	Lunch [1hr]				
	2.30-4.00 pm	DIFFERENTIAL EXPRESSION ANALYSIS	Introduction to DESeq, Preparation of DESeq count file , Running DESeq, Visualization of data	Rintu Kutum	
			Basic of isoform detection , Running Cufflinks , Understanding Cufflinks output		
Tea break [30mins]					
4.30 - 5.30 pm	SMALL RNAseq STUDY DESIGN AND ANALYSIS	Introduction to small RNAseq library preparation	Bharati Mehani		
		small RNAseq Analysis			
5.30 - 6.30 pm	TALK BY CHIEF MENTOR	NGS for New Genome Science	Prof. Samir K. Brahmachari		
SATURDAY, MARCH 05-2016					
METAGENOMICS(Bacterial Community Analysis)					
Day	Time	Topic	Title	Speaker	
4	9:00-10:00 am	SCIENTIFIC CASE STUDY LECTURES	Partners in crime: Role of microbiome in skin disorders	Dr. T N Vivek	
	10:00-11:00am	DESIGNING METAGENOMICS STUDY	How to conduct metagenomics study	Dr. Nar Singh, Dr. Rajesh Pandey	
	Tea break [30mins]				
	11.30am-1:00 pm	RAW SEQUENCING DATA	454, ILLUMINA and Mapping file generation	Anupam Mondal, Shashank Gupta, Gourja	
	Lunch [1hr]				
	2:00-2:45 pm	PERFORM QC	Demultiplex reads	Anupam Mondal, Shashank Gupta, Gourja	
			Sequence Length Filtering, End-Training, Minimum Quality Score		
			Chimera Removal using de novo and reference based		
		16s rRNA DATABASE	Silva, Greengens, RDP	Anupam Mondal, Shashank Gupta, Gourja	
	2:45 - 3:30 pm	OTU PICKING	de novo , closed and open reference	Anupam Mondal, Shashank Gupta, Gourja	
			OTU table information		
			Absolute and relative normalization		
	Tea break [30mins]				
	4:00 - 4:45 pm	TAXONOMIC SUMMARY	Summarize OTUs at different taxonomic levels	Anupam Mondal, Shashank Gupta, Gourja	
Diversity, Richness, Evenness					
α -diversity and rarefaction (Analysis using QIIME and R)					
	DIVERSITY ANALYSIS	β -diversity and rarefaction (Analysis using QIIME and R)	Anupam Mondal, Shashank Gupta, Gourja		
4:45 - 5:30 pm	CORRELATION ANALYSIS	Inferring the correlation relationship among members of microbial communities using SparCC and spearman	Shashank Gupta, Anupam Mondal, Gourja		
		BIOMARKER DISCOVERY			
		FUNCTIONAL DISCOVERY			
		Metagenomic biomarker discovery using LEfSe			
		Predict metagenome functional content from marker gene using PICRUST			