

Hands-on-workshop on “Next Generation Sequencing and its applications in Medicine’

at the BKL Walawalkar Rural Medical College, Savarde, Taluka: Chiplun, Maharashtra 415606

Next Generation Sequencing (NGS) has transformed diagnostics and biomedical research due to its high throughput nature, accuracy, and cost-effectiveness. The **5-day comprehensive** workshop will give **hands-on training in sample preparation for NGS analysis** starting with the DNA extraction, PCR, library preparation, its quantification and sequencing run set up on Illumina NextSeq1000. The participants will learn **bioinformatic analysis** of the sequence data generated including FastQC quality analysis, alignment to the reference genome, identification and annotation of the variants using several online databases like Clinvar, dbSNP. The participants will learn primer designing for preparation of panels for targeted sequencing. They will learn several applications of the Next Gen Sequencing in medicine. The applications include targeted sequencing for identifying somatic alterations in tumor tissues for cancer diagnosis, identification of germ-line variants like those in BRCA1/2 genes in breast cancer. Participants will get hands-on training in preparation of library for gut microbiome. **Guest lectures will be organized from experts who have been actively using NGS in diagnostics and research. The guest lectures include Gut Microbiome, Applications of NGS in oncology, Gut microbiome analysis for immunotherapy.**