Bioinformatics

Hardware

1. **High Speed/Performance Computers (Dell Computers).**

2. **Data Storage System:** The Center currently has an EMC Isilon X200, powered by the OneFS operating system, with a total of 132 TB of storage capacity. The data from server and storage system are bi-weekly backed up to tape.

Software

A comprehensive software infrastructure for genomics research applications has been installed in the high performance server. It maintains over 100 open source bioinformatics software packages for NGS analysis, integration analysis, data mining and statistics analysis.

Bioinformatics Pipelines

- RNA-Seq pipeline

- miRNA-Seq pipeline

- Single-Cell RNA-Seq pipeline

- DNA-Seq pipeline

- DNA methylation sequencing pipeline, e.g. RRBS

- Methylation array pipeline, e.g. Illumina HumanMethylation450 BeadChip

- Pathogen-Seq pipeline, e.g. HPV breakpoint identification

- ChIP-Seq pipeline

- DNA methylome and transcriptome integration analysis

- Downstream data visualization (e.g., GO and IPA pathway analyses)