### Step 1: Identify Genes of Interest

# Team 1 – Identify Known Genes of Interest

- Compiling genes of interest by...
  - Mining harmonizome database
  - Genes associated with chronic illness and viral infection

Team 2 – Identify Genetic

Differences between Controls
and Diseased

Use Differential Expression —
to identify differences
between controls and
diseased (Strep B, RSV, Sepsis,
T1D, HSV1)

# **Differential Expression** FastQ Files Quality Control FastQC Reference GTF/GFF File Alignment with gene model Genome HISTAT2 **BAM** files

Gene expression quantification

StringTie



#### Step 2: Pool Genes of Interest

- Determine overlap between Team 1 and Team 2 genes
- Diagnostic Potential: Predict virus from differentially expressed genes



## Step 3: Report Genes of Interest

- Translate genes of interest into an accessible nomenclature
- Transcribe genetic nomenclature into Electronic Medical Records (EMR)