**Analysis of Cancer Cell Line Omics Data**

Research questions:

1. What omics data can we download? Quality? Usability?
2. ESCC cells
   1. General characterization of omics data
   2. Determine NRF2 pathway activity (How? RNAseq data?)
   3. Compare NRF2high vs NRF2low
      1. What causes NRF2high (mutations of NRF2, KEAP1, CUL3, and some others)
      2. Drug sensitivity and resistance (NRF2high should be less sensitive to methotrexate. Methotrexate can serve as a positive control.)
      3. Potential drug targets in NRF2high (CRISPR data)
      4. Potential drug combinations for NRFhigh (NRF2 inhibitor plus other drug)
   4. Focus on other targets, for example, p53 mutation
3. Prediction of drug sensitivity with AI
   1. Training set and test set?
   2. Develop a searchable database for commercial use