<u>Cbb752b22 Quiz #1 Study Guide</u>

There are **some topics** from the lectures that we **drilled down** into detail on. Here is a list of them that you should know for the quiz:

- How to do a dynamic program sequence alignment
- How to compute sequence variability (with entropy)
- How to use simple hash tables & indices to speed up alignment
- Table normalization + insert/delete/update/select statements
- How to call an SV from read depth analysis
- How to construct a simple decision tree from a set of features
- Definitions of accuracy, sensitivity, specificity, PPV, FPR, and FDR
- How to do simple clustering (via K means or agglomerative approaches)
- How to correlate gene expression values and construct a network
- How to compute an eQTL
- Network quantities (clustering coefficient & path length)
- What is the degree distribution of a scale free network
- How to interpret the SVD of a data matrix -- e.g. what is a biplot
- How to do build up a profile matrix (e.g. using a simple EM/psi-blast approach)

For **all other topics**, you should understand at a **high level,** i.e., the contents of the lecture. Quiz #1 will cover everything from the 1st half of class (1/26 to 3/14).

You can find all slides on the class website: http://cbb752b22.gersteinlab.org/syllabus, and all recorded lectures on canvas->media library.

Examples of previous quizzes may also be helpful to get an idea of what may be on this year's: http://cbb752b22.gersteinlab.org/quiz