Biostatistics Week 2 Agenda:

Readings:

- **Zar Chapter 5 – Probabilities**
- **Zar Chapter 6 – The Normal Distribution**
- ***Biostatistics* 050 – Standard & Conditional Probability**
- ***Biostatistics* 060 – Pedigree analysis using Bayes Rule**
- ***Biostatistics* 061 – Bayesian Analysis**
- ***Biostatistics* 070 – Probability Distributions**
- ***Biostatistics* 080 –Normal Distribution**
- ***Biostatistics* 090 – Assessing Data Normality**

To do:

- **Begin Portfolio:**

Now is the time to begin work on your portfolio of prototypes in R. A portfolio is a document in which you keep all the parts together in a logical sequence. Your TA will provide guidance on what's expected and how to get started with it. It is very important to get started right away on this term-long project so things don't pile up at the end creating a big problem. Stay tuned for details!

To know:

Permutations vs combinations
Law of multiplied probabilities
Law of added probabilities
Potentially co-occurring events
Factorial notation
Venn diagram
Extended (modified) law of multiplied probabilities
Independent vs dependent events
Total probability vs Conditional probability
Bayes Rule & Bayesian analysis
Predictive vale (positive & negative)
Sensitivity vs Specificity
Probability distributions (binomial, Normal, t, F, χ^2)
Calculating probabilities, and quantiles using p,q,r,d functions in R
Q-Q plots
Symmetry vs kurtosis