**Statistical Measurements that Increase Certainty**

**N**: the number of independent measurements in your observation

**Average**: Mean, Median, Mode: The “central tendency”.

**Variance**: The average ‘distance squared’ of a given data point from the mean. If the variance varies, the mean is meaningless.

**Standard Deviation**: =Sqrt(Variance). In the units of the measurement, a prediction of how close the next data point will be to the already computed mean. For independent measurements with random error only, about 2/3 of your data should be within one standard deviation **σ** of the current mean.

**Standard Error**: also known as “the standard deviation of the means”, computed as **σ/sqrt(N-1),** an estimate of how close the mean of the next ***experiment*** will be to the already computed mean of your current experiment. For independent experiments, about 2/3 of your new means should be within one standard error of your current mean.

Other representations: line plots, box plots, histograms