**Transcripts for Using Excel for Xbar Chart**

Alemi: Hi, this is Dr. Alemi with a brief introduction on how to create and export a chart inside Excel. Here is our data. The first thing we do, we calculate the grand average. We use a function average, and we make sure that we take the data for all data points, for all time periods.

We also use the function standard deviation to calculate the standard deviation for all time periods. Next, we use the average function to calculate the observed values for each time period.

Next we use the standard deviation for all time periods and divide that by the square root of the count of the number of observations in the time period. Notice that the standard deviation, there is a dollar sign before B and then before 9, so that when we copy it, it doesn't change.

Upper control limit is the grand average. Again, we put a dollar sign so it doesn't change when we copy it plus 1.96 times the standard deviation for the time period. The lower control limit is the grand average minus 1.96 times the standard deviation.

Now we can select Insert and select a line chart and highlight the upper and lower control limits columns of data as well as the observed values. This is the control chart we will get. Notice that the limits are in red. Notice the observations use markers but the limits don't. Notice that the x-axis has a title, and the y-axis has a title.