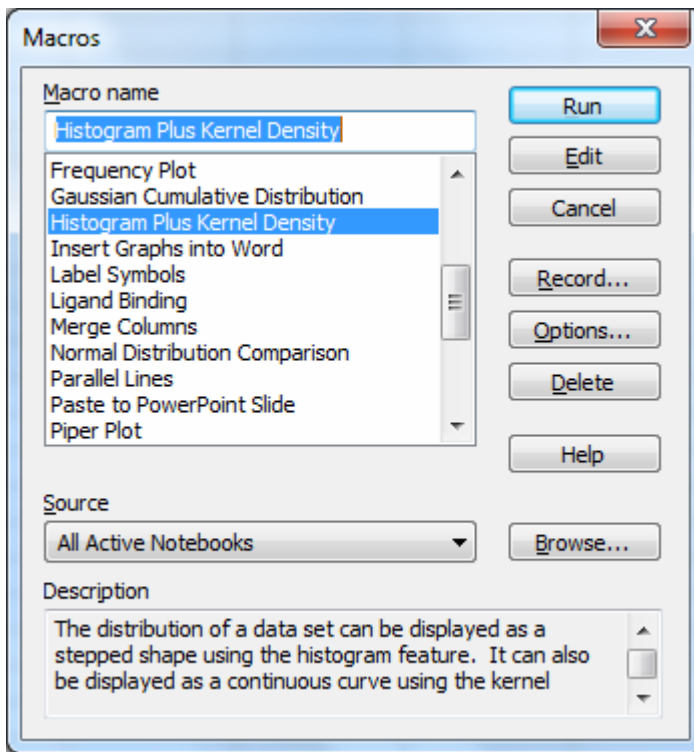# Histogram with Kernel Density Macro.

In addition to the histogram options covered in our last Tech Tips, SigmaPlot 13, now provides the macro Histogram Plus Kernel Density. This is available in the Toolbox ribbon, Macros.
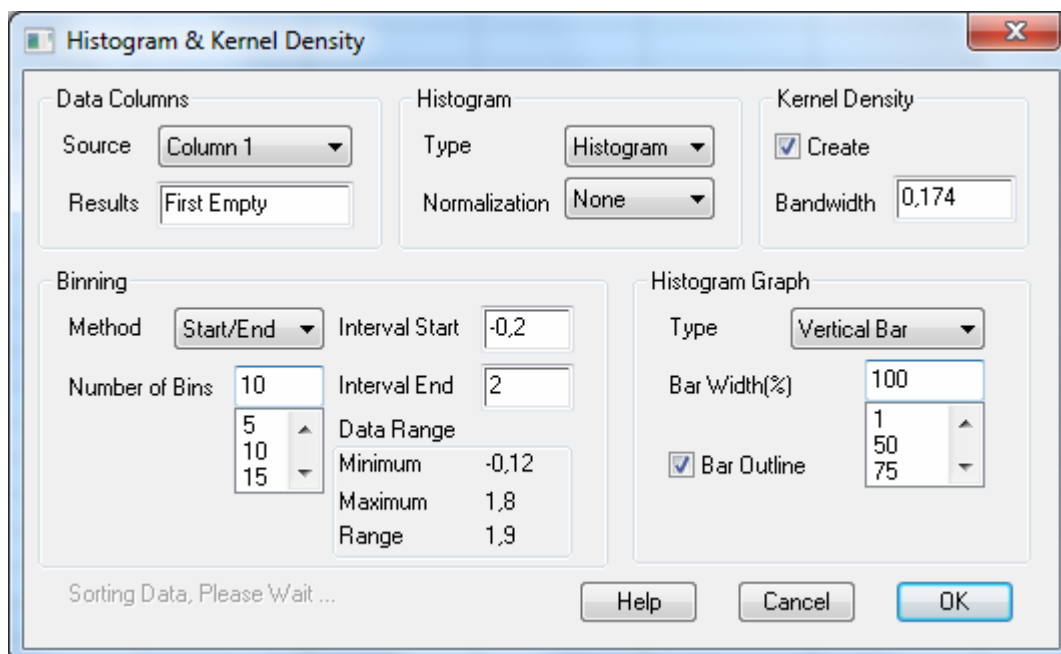
The options available in the dialog allow you to select the data source column, options for Binning, including the methods Automatic, Min/Max, and Start/End. Automatic gives no binning options, Min/Max allows input on the number of bins, Start/End allows additionally the interval start and end values.
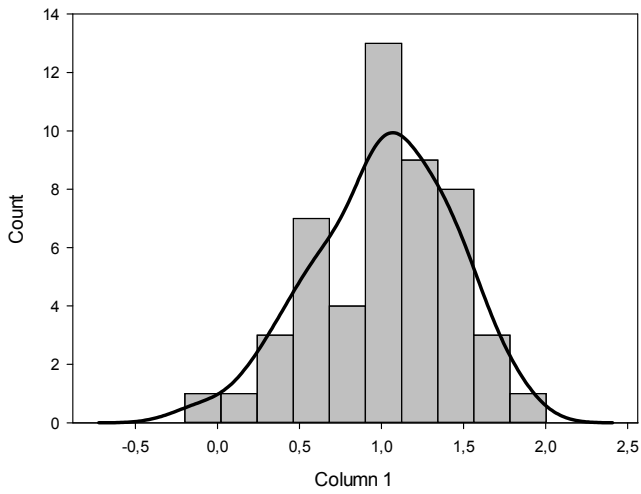
The histogram type has options for Histogram or Cumulative, with Normalization options of None, 1, or 100.

If Kernel Density is selected, a bandwidth will be automatically calculated, based on B.W. Silverman, 1986 (http://ned.ipac.caltech.edu/level5/March02/Silverman/paper.pdf). This value can be changed manually (see examples below). If you have manually entered a value, and wish to revert to the automatic calculation, deselect, then reselect the Create tick box.
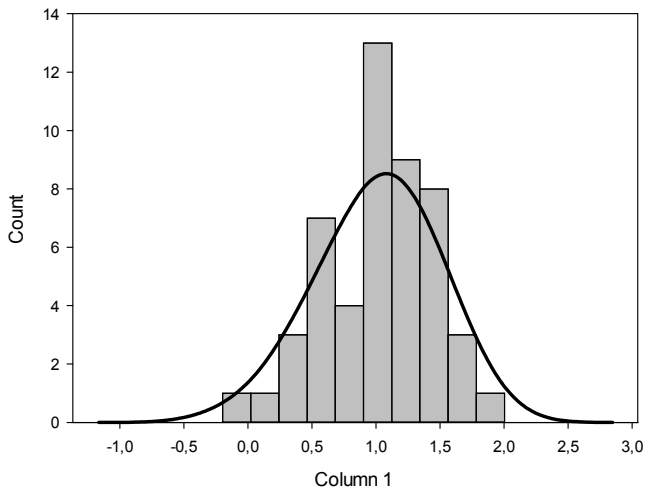
Graph options are Vertical Bar, Vertical Step, Horizontal Bar or Step, and None. If None is selected, the graph created will just be a Kernel Density line, if this is selected. If it isn't, then no graph will be created, but the histogram data will be placed in the worksheet.

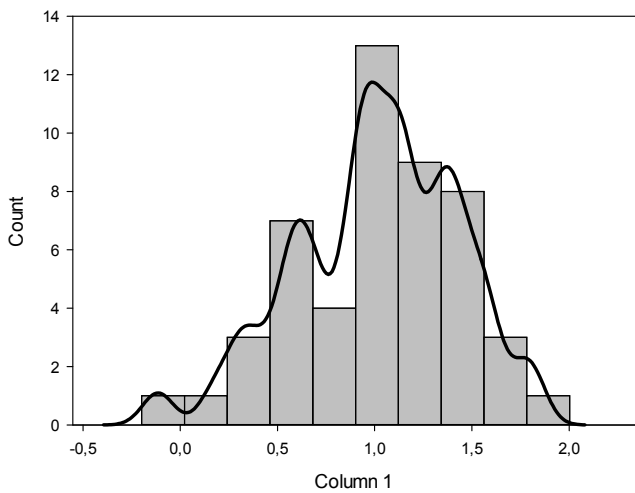Histogram and Kernel Density, default bandwidth 0,174

Histogram and Kernel Density, bandwidth 0,3

Bandwidth 0,3

Histogram and Kernel Density, bandwidth 0,08

Bandwidth 0,08