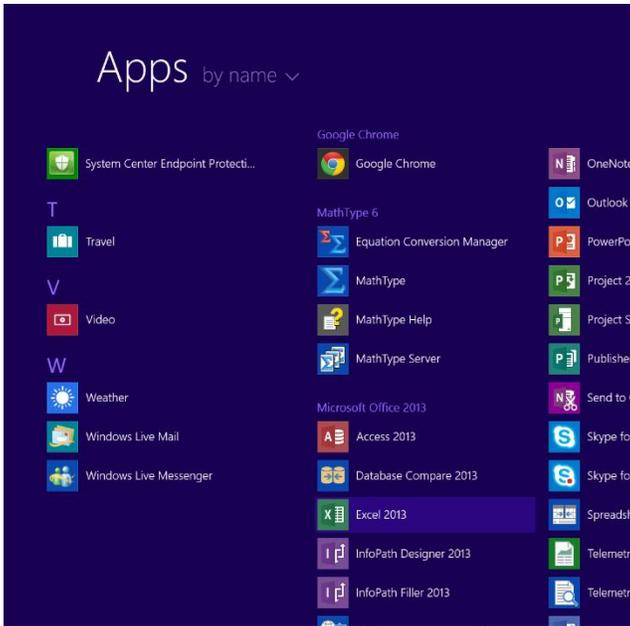**Graphing Linear Data with Microsoft Excel 2013**
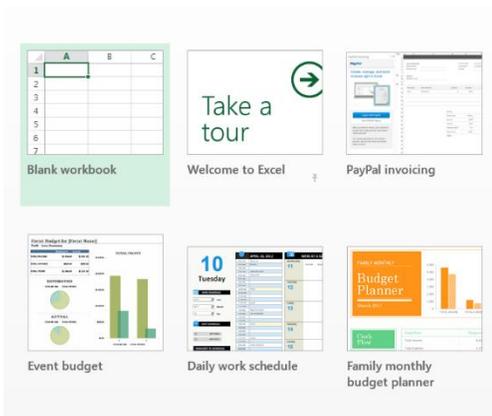
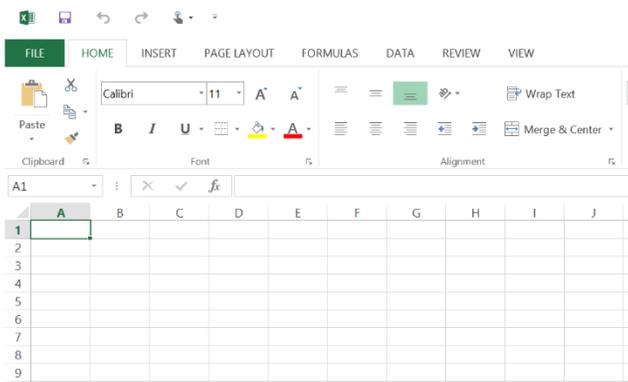Note: "Click" refers to a left click.

Launch the Program

To launch Microsoft Excel 2013, click the Windows icon 🪟 in the bottom left of the screen, then click "Excel 2013", or locate the program using the Start button.

Open a new empty spreadsheet by clicking "Blank Workbook".

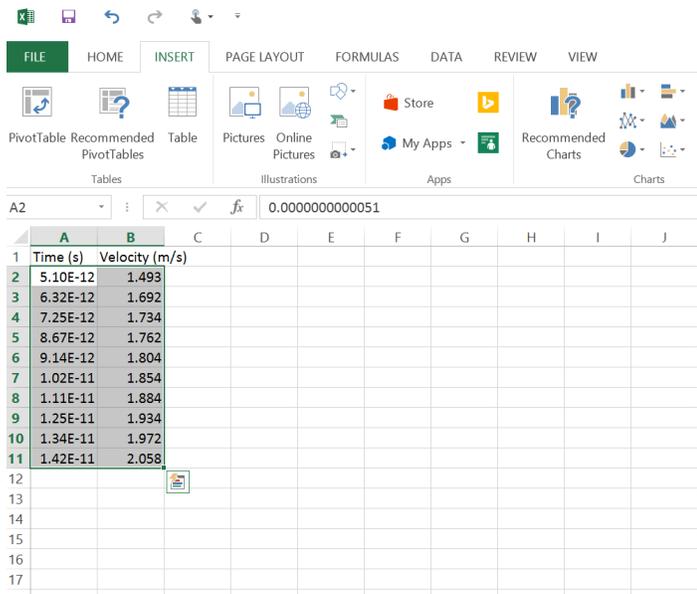A blank spreadsheet like the one below should appear.

Enter and Highlight the Data

Input the values in the spreadsheet. Use the arrow keys and keyboard "Enter" key to move between cells or use the mouse to click to another cell. When entering values with a base 10 part like 5.10×10^{-12}, use the letter "e" or "E" to replace the base 10 part. For example, 5.10×10^{-12} would be entered as 5.10e-12.

For graphing purposes, the default for the horizontal or X axis is the left column, while the vertical or Y axis is the right column. (The quantity or axis titles used in the example below like Time (s) and Velocity (m/s) are optional at this point, and only need to be used if the table itself is going to be used).
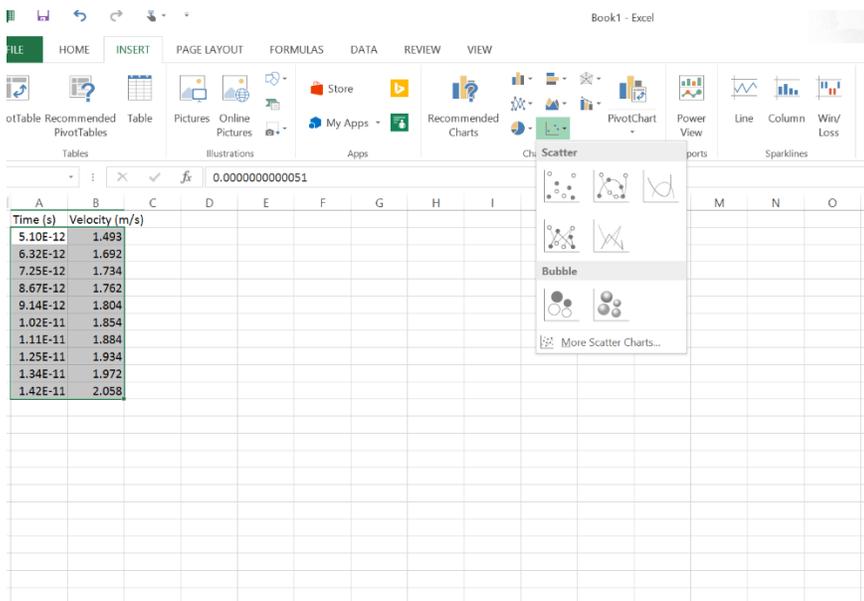
To highlight the number data, click in the upper left most cell (A2) and drag over the desired cells (B11).
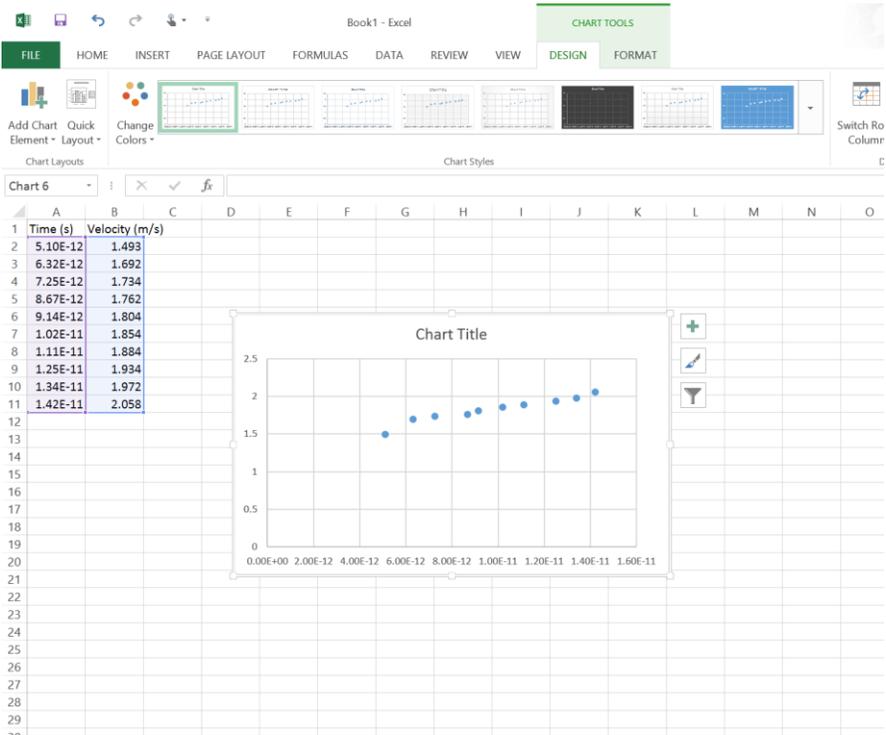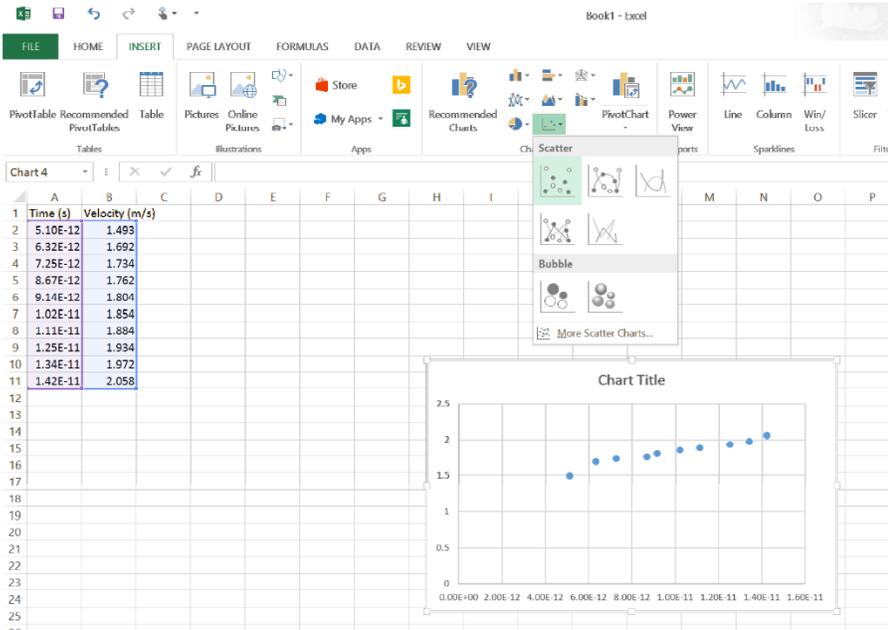

Plot the Points on a Chart

With the data highlighted, from the top menu tabs click "Insert", then from the "Charts" menu bar click [icon] ,

then click [icon] . This should insert a "Scatter Plot" chart on the worksheet.

Book1 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

PivotTable Recommended Table   Pictures Online Store My Apps   Recommended PivotChart Power Line Column Win/ Slicer
          PivotTables   Pictures   Charts   View   Loss

Scatter

Bubble

More Scatter Charts...

Chart 4

	A	B
1	Time (s)	Velocity (m/s)
2	5.10E-12	1.493
3	6.32E-12	1.692
4	7.25E-12	1.734
5	8.67E-12	1.762
6	9.14E-12	1.804
7	1.02E-11	1.854
8	1.11E-11	1.884
9	1.25E-11	1.934
10	1.34E-11	1.972
11	1.42E-11	2.058

Chart Title

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CHART TOOLS

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DESIGN FORMAT

Add Chart Quick   Change   Switch Ro
Element Layout   Colors   Column

Chart Layouts   Chart Styles

Chart 6

|	A	B
1	Time (s)	Velocity (m/s)
2	5.10E-12	1.493
3	6.32E-12	1.692
4	7.25E-12	1.734
5	8.67E-12	1.762
6	9.14E-12	1.804
7	1.02E-11	1.854
8	1.11E-11	1.884
9	1.25E-11	1.934
10	1.34E-11	1.972
11	1.42E-11	2.058

Chart Title

Format the Chart and Add a Trendline

On the right of the chart click the Chart Elements button ![+] , ensure or toggle ON "Axes", "Axis Titles", "Chart Title", "Gridlines", and "Trendline".
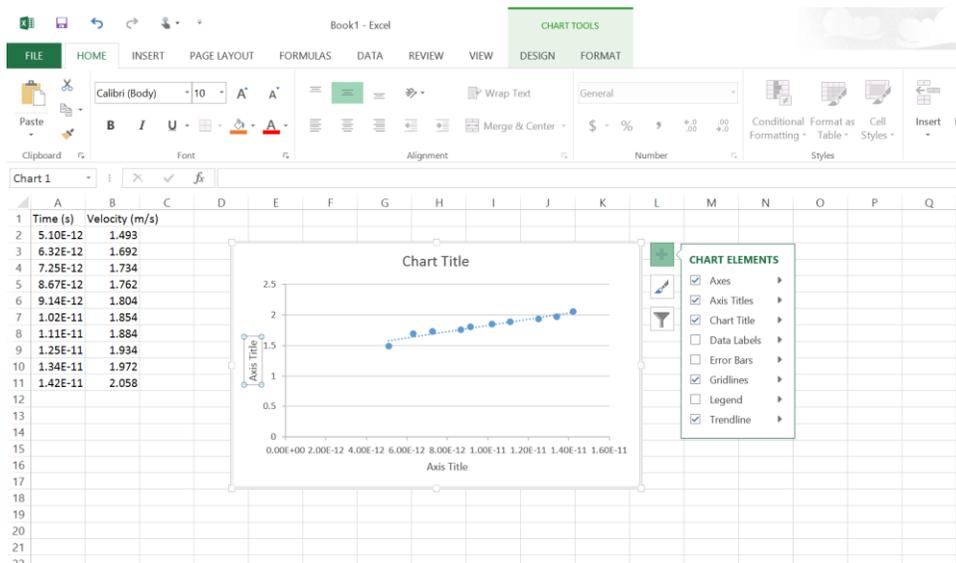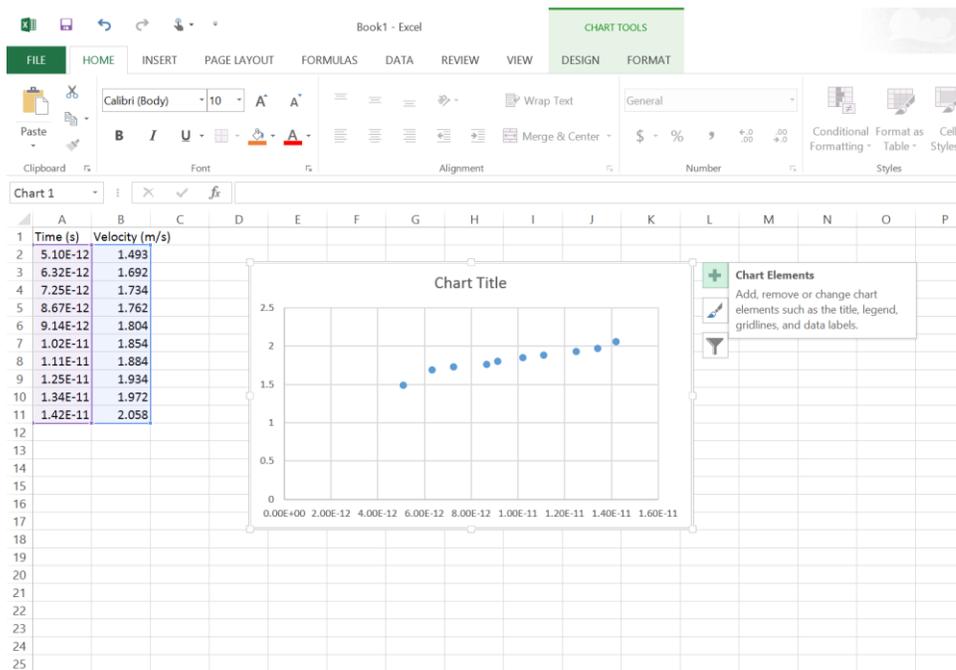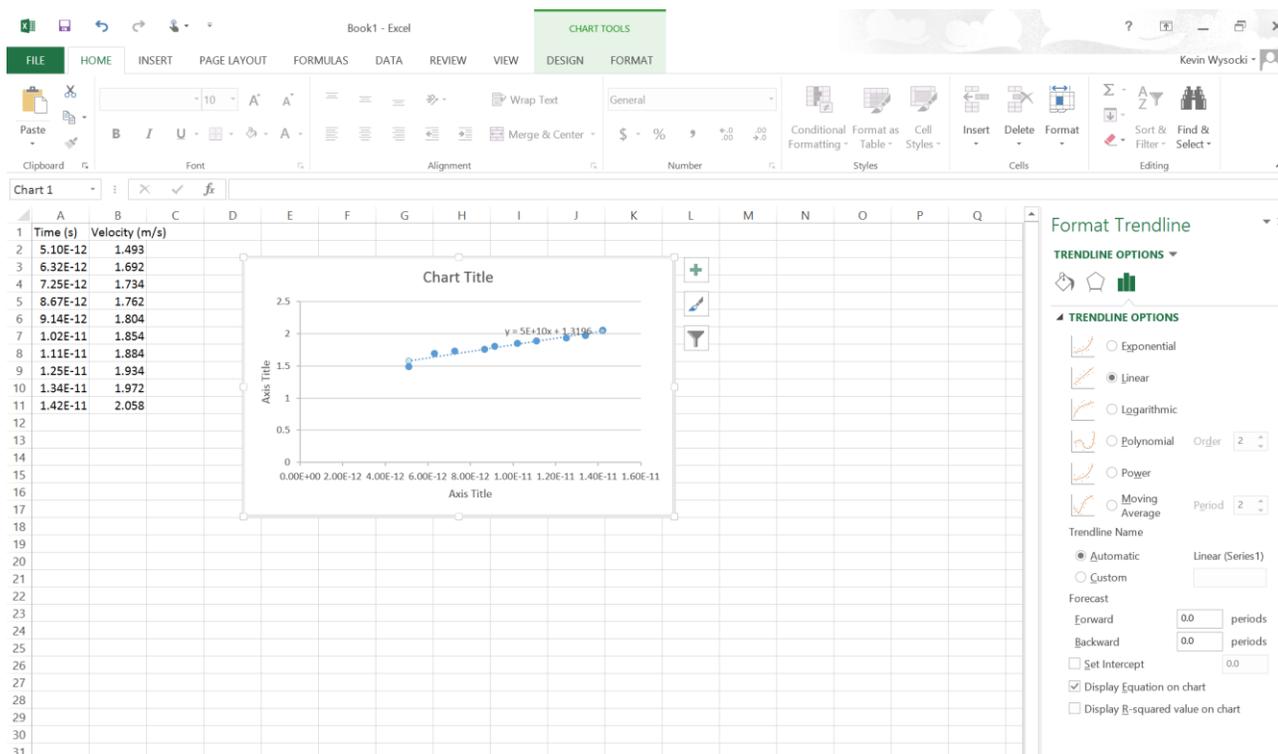
Display the Equation of the Trendline

Right click anywhere on the Trendline, then click "Format Trendline…".
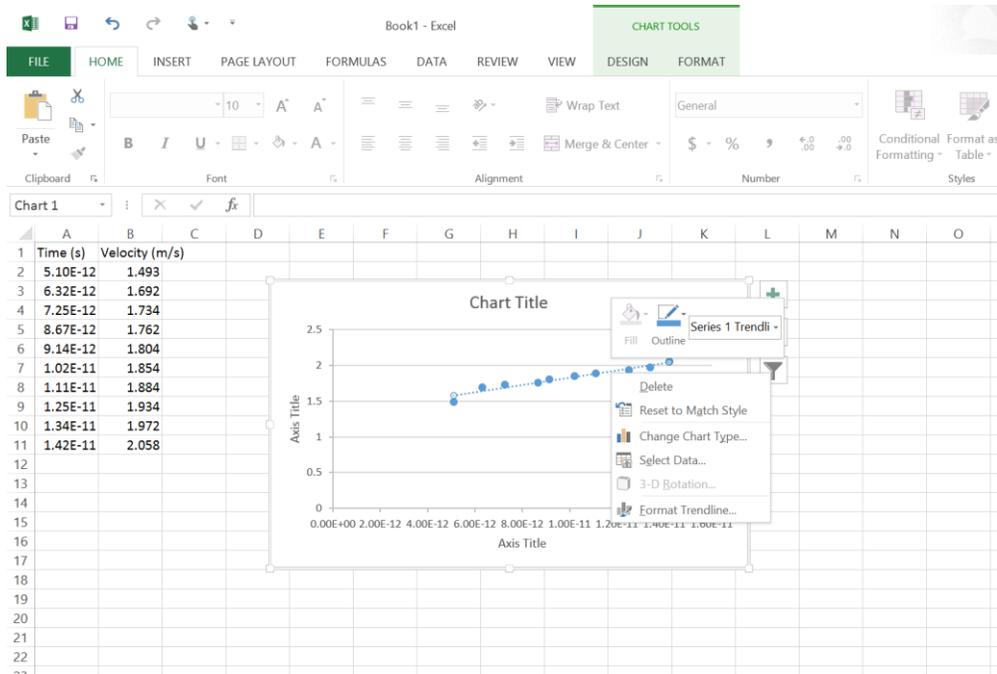
The "Format Trendline" dialogue box should appear on the right of the screen. Toggle ON "Display Equation on Chart". The linear equation in y = mx + B form should appear on the chart. (y=5E-10x+1.3196)

Click and drag the equation to somewhere legible on the chart. The "Format Trendline Label" dialogue box should appear on the right of the screen.

Add Chart Title and Axis Titles

Click and highlight the words "Chart Title", and type in the name of your Chart. Repeat the process for each "Axis Title".
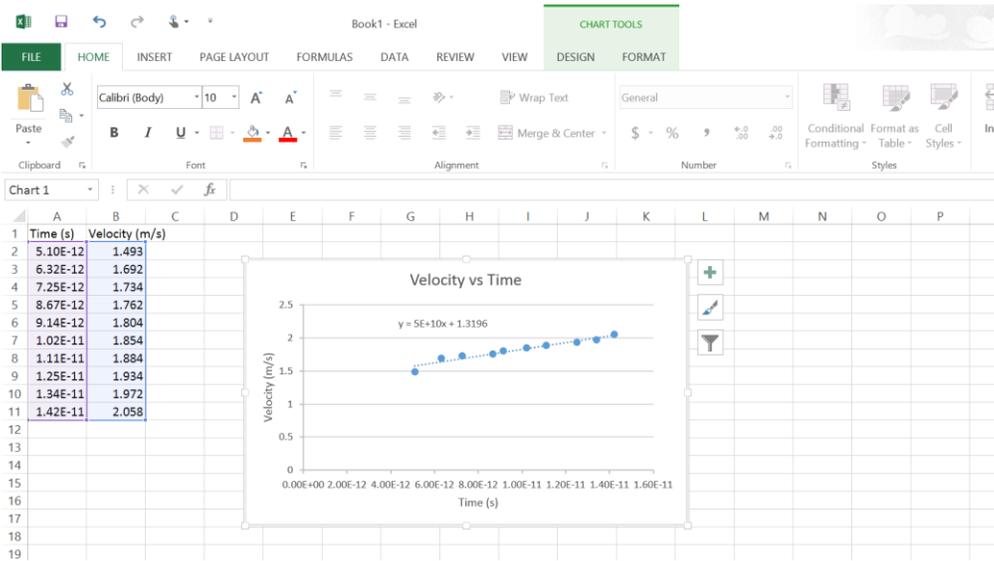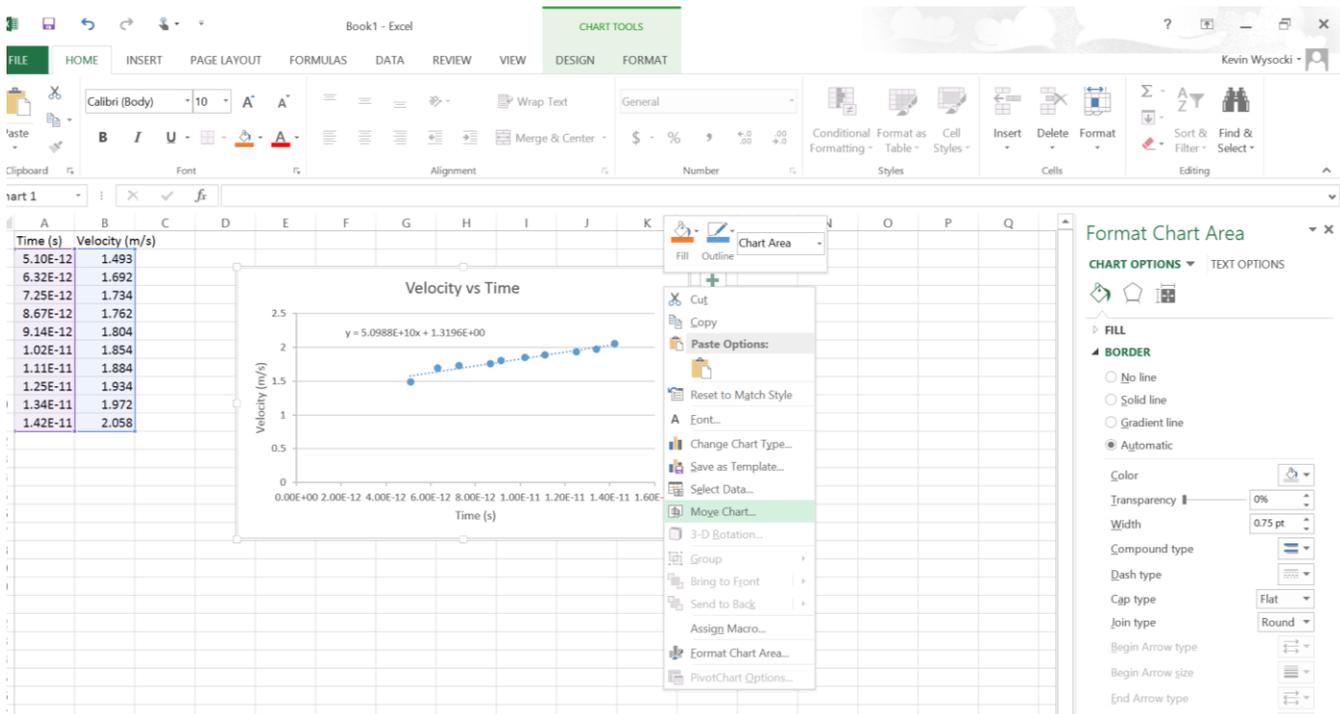
Format the Trendline Label

If the constants in the Trendline Equation need to be more precise, they can be adjusted to a desired number of digits. Click on the equation and the "Format Trendline Lable" dialogue box should on the right of the screen; or right click on the equation and choose "Format Trendline Lable". Click the "Label Options" button ▮▮ , and under the "Category" menu, choose Scientific and the desired number of "Decimal Places". (y=5.0988E-10x+1.3196E+00)
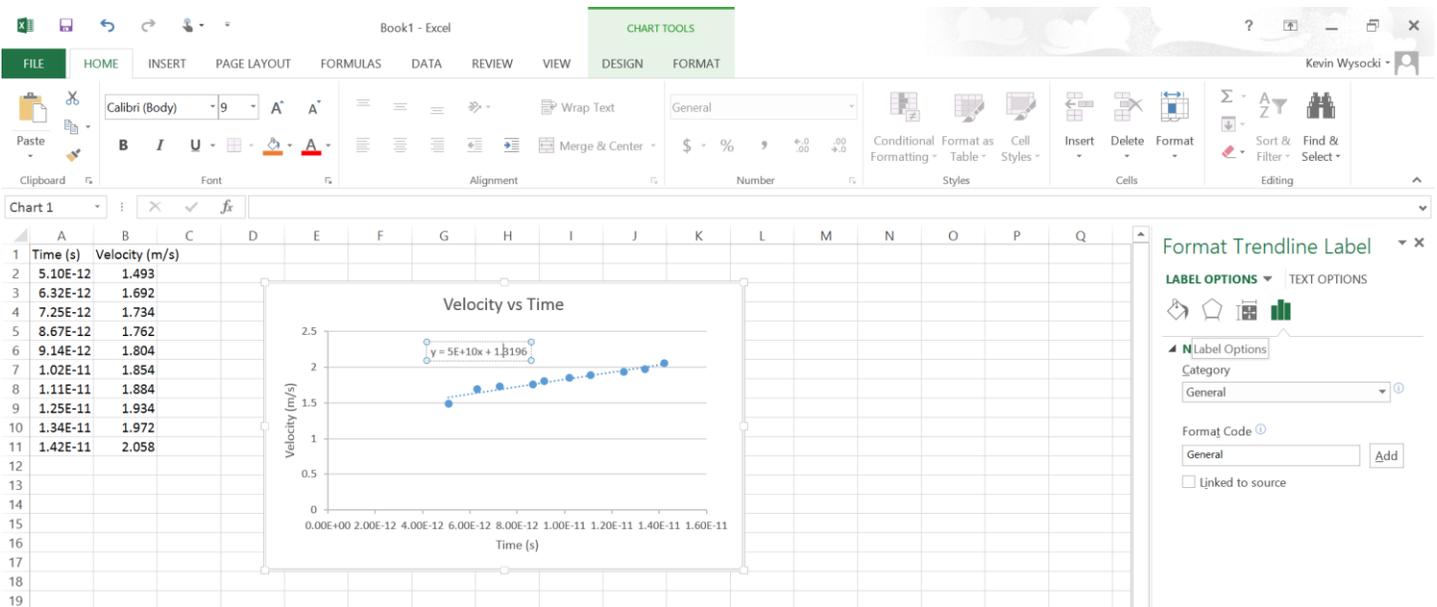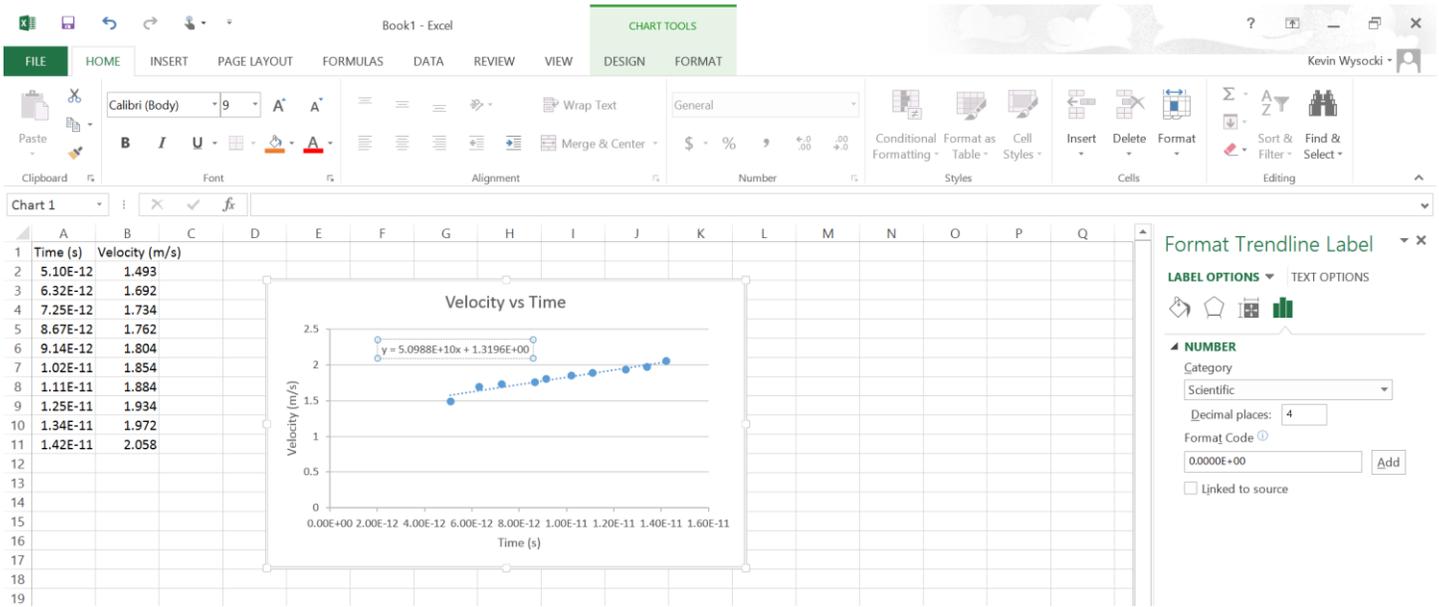
Make the Chart Large and on its own Sheet

Click near the outside border of the chart. Right click and click "Move Chart".

The "Move Chart" Dialogue box should appear. Toggle ON New Sheet and click Ok.

The chart is now complete and can be printed by using the "File" Menu in the upper left corner of the screen.