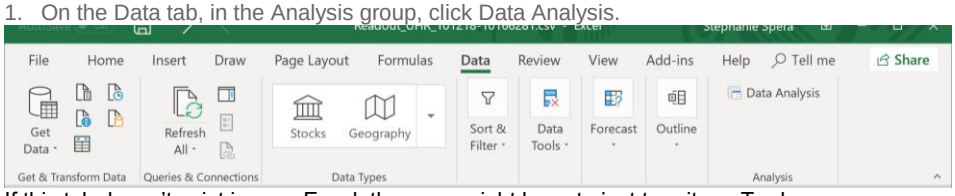
Performing a T-Test in Excel.

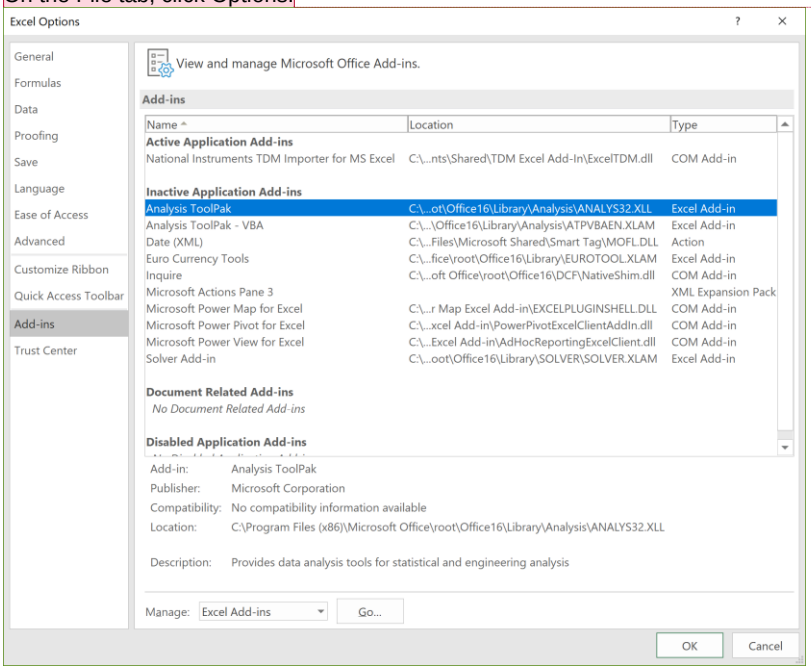
1. On the Data tab, in the Analysis group, click Data Analysis.



If this tab doesn't exist in your Excel, then you might have to just turn it on. To do so:

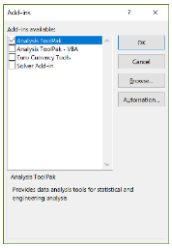
a. On the File tab, click Options.

Commented [SS1]: On a Macc → This might be tools > Add-ons.



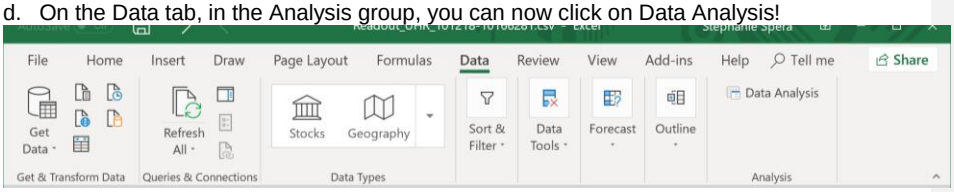
b. Click "Go…"

c. Check Anlalysis ToolPak and

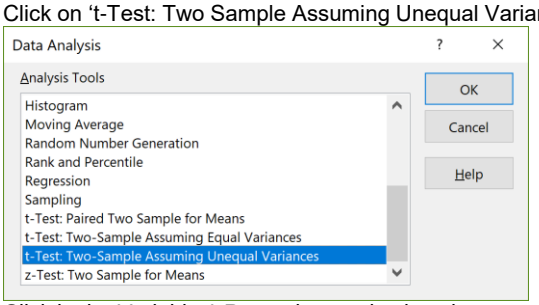


click OK

d. On the Data tab, in the Analysis group, you can now click on Data Analysis!



2. Click on 't-Test: Two Sample Assuming Unequal Variances'



3. Click in the Variable 1 Range box and select the range of data collected by the HOBO logger of your first PV site.
4. Click in the Variable 2 Range box and select the range of data collected by the HOBO logger for your second PV site.
5. Make sure the alpha is set to 0.05
6. You can keep the "New Worksheet Ply" selected in Output options, this will output the results in a new datasheet that you can rename.
7. Click OK
8. Your result will look something like:

	A	B	C
1	t-Test: Two-Sample Assuming Unequal Variances		
2			
3		*Variable 1*	*Variable 2*
4	Mean	87.88601	97.30627
5	Variance	107.1032	85.23838
6	Observations	186	186
7	Hypothesized Mean Difference	0	
8	df	365	
9	t Stat	-9.26367	
10	P(T<=t) one-tail	8.68E-19	
11	t Critical one-tail	1.649039	
12	P(T<=t) two-tail	1.74E-18	
13	t Critical two-tail	1.966485	

9. To reject the null hypothesis (that there is no difference between the temperature means at each site:

   [t Stat] < [**-** t Critical one/two-tail] (depending on which you choose)
   OR
   [t Stat] > [+ t Critical one/two- tail]

In this case, if I'm interested in the two-tailed result:
-9.263 < -1.966, so we can reject the null hypothesis, and conclude that means of these two datasets are significantly different.