

10/10/ 2010

Data to be used for lab reports:

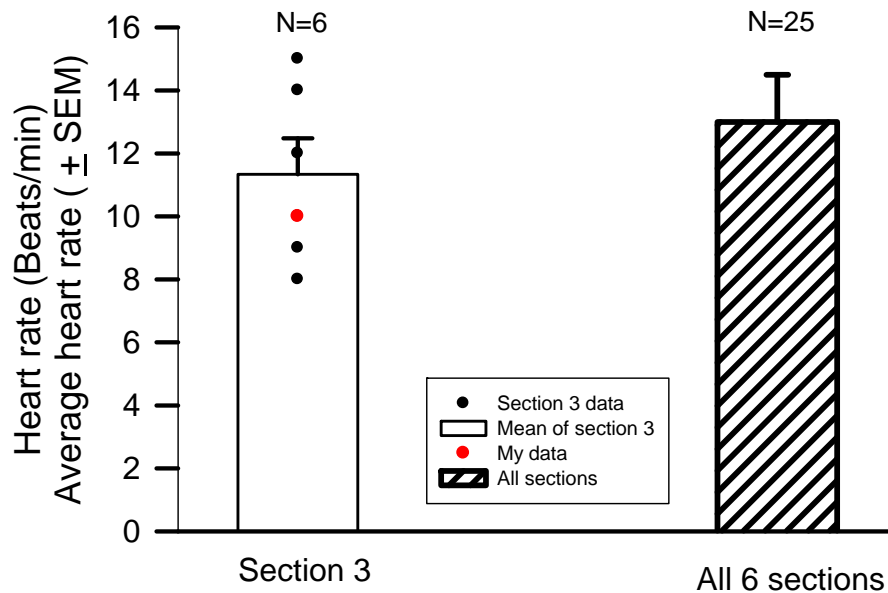
A number of people have questions about the data to be used for the lab . Let me help out here.

1. You have your data that you collected or your group collected. (Don't forget to list people in your group on the day you collected the data).
2. You have the data from your section. (Posted on the data pages for that lab)
3. You also have data from every section. (Posted on the data pages for that lab)
4. You even have data from research published in journals.

So like in a research lab, one reports on the data you collected. Make a clear distinction of your data from data collected by other people.

There are multiple ways to present the data. I would suggest in the Results section to report your data first. Then you could either bring in the results from other people and graphs with your data here . But somehow make sure the reader knows what is your data and what is from other sources. Or you might just want to use the Results section to report on your data then in the Discussion section bring in the results from the rest of the section and all sections. If you want to make an appendix to your report you can also do this and refer to that for the data collected by others.

Maybe some type of graphs like this one I just created from made up numbers could be used.



Making a good graph can take a long time if you are not use to Excel or graphing programs. In my day, the graphs were made by hand and using rulers, and rub off labels, graph paper. This would take a long

time to do to make it look right. Then we would put it on a copy machine so the labels would not rub off when handed in.

Statistics were done by hand back in the day as well. Nowadays it is a breeze with computers. It appears that many do not understand the theory behind the stats today as one relies on the computer so this is part of the learning exercise.

STATS:

Well this is part of the assignment to figure out what statistical design you want to use for what data. What are the assumptions used for particular statistical tests that allows me to use them or not. Can I use a T-test with a  $N=3$  ??? Is that valid ? Now there is also a term called the power of the test (alpha values) . I know this can get complicated. But you can look into this a bit. I bet many aspects compared even with all the data sets that the power of the test is low and one might not be statistically able to compare data sets when considering the power of the test.

For a start in understanding such aspects one can use:

<http://en.wikipedia.org/wiki/Statistics>

<http://faculty.vassar.edu/lowry/VassarStats.html>

And other good www sources:

[http://en.wikipedia.org/wiki/Statistical\\_power](http://en.wikipedia.org/wiki/Statistical_power)

[http://www.health.state.ny.us/environmental/investigations/love\\_canal/power.htm](http://www.health.state.ny.us/environmental/investigations/love_canal/power.htm)

<http://statpages.org/>

<http://www.whichtest.info/>

THERE IS ALSO A FREE STATS HELP at the University of KY. Maybe go as a group.

MAKE APPOINTMENTS EARLY: [http://www.uky.edu/ComputingCenter/SSTARS/brochure/brochure\\_n.html](http://www.uky.edu/ComputingCenter/SSTARS/brochure/brochure_n.html)

Yours,

Robin Cooper