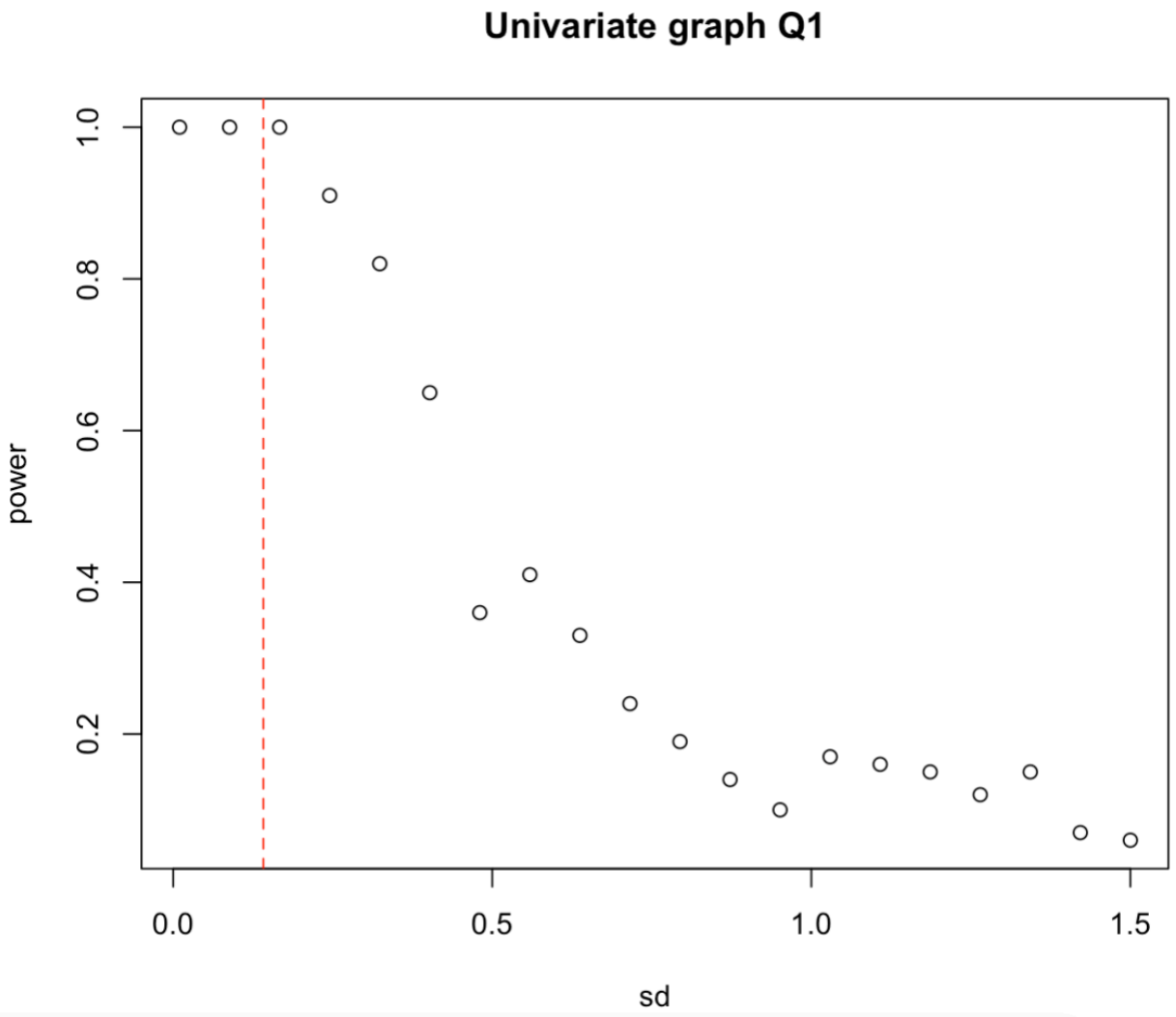
Analysis of Environmental Data - Lab 11
Olivia Dinkelacker

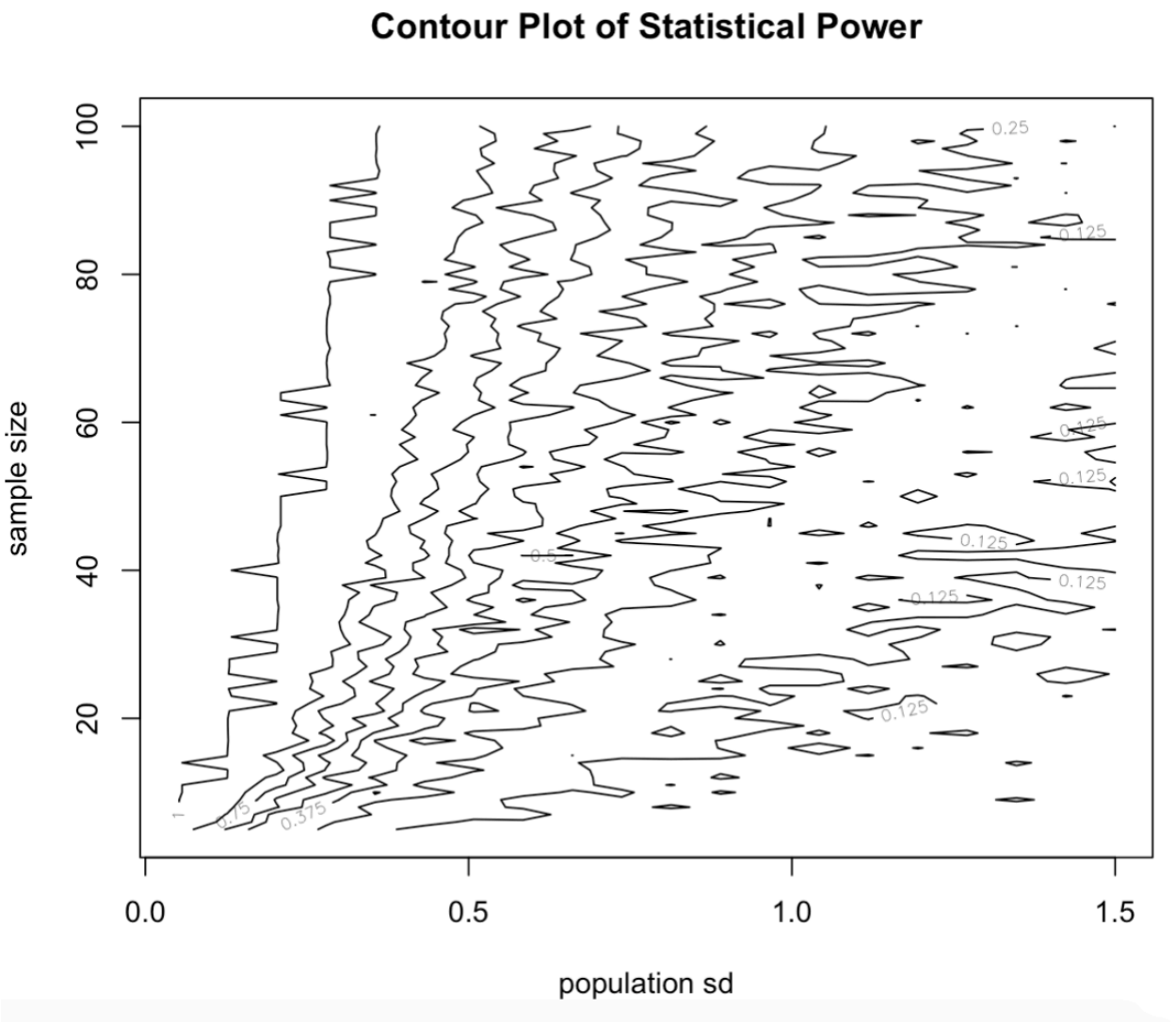
Q1 (2 pts.): Include a figure of your line plot in your report.



Q2 (2 pts.): Why do you think that statistical power decreases as population dispersion increases?

When there is an increase in population dispersion, there is more noise and less accuracy in the data, and we can make less strong inferences. With an increase in sample size, we get a lower population sd and higher statistical power.

Q3 (2 pts.): Include a figure of your contour plot in your report.



Q4 (2 pts.): Qualitatively describe the patterns you see in the contour plot. Make sure you discuss the effects of sample size and population dispersion on statistical power.

The contour lines are steeper towards the left side of the plot. Statistical power is decreasing to the right side of the plot indicated through less steep lines.
The lower the population sd, the higher the statistical power.
The higher the sample size, the higher the statistical power.
The higher the sample size, the lower the population sd.

Q5 (5 pts.): Upload your plot as an interactive html html file. NOTE: some Mac users are not able to use RGL. You may also upload a static plot created with persp() if you can't get RGL to work on your computer.

file:///Users/oliviadinkelacker/Documents/ECo/environmental_data/power_plot.html

Q6 (2 pts.): Describe how you could use the information shown in your plot when designing an experiment.

The information in the plot could tell us how big our sample size has to be in our experiment to get the desired statistical power. It could also tell us how much statistical power we have, when we were able to only include a certain number of individuals in our experiment.