## Assignment 1: Postlab for technique lab 1 (pulse rate)

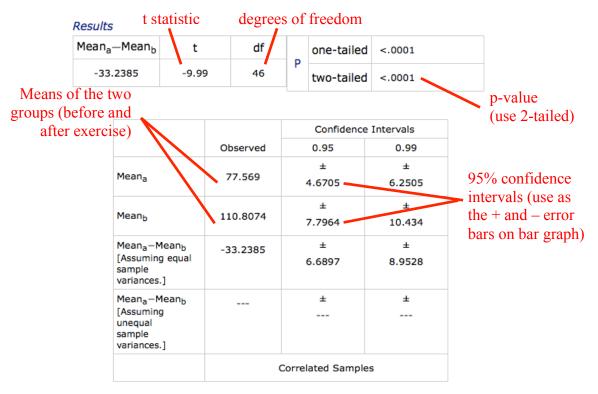
DUE DATE: <u>Lab Week 3 (L1: 02/11; L2: 02/08)</u>, beginning of lab POINT TOTAL: 1.5% final grade FORMAT REQUIRED: email or hard copy ASSIGNMENT DESCRIPTION:

For this assignment, you should write a Results section in scientific style describing the outcome of our pulse rate experiments. This should include **a brief text section describing the results in paragraph form (probably one to two paragraphs)**, which will include the outcome of **four t-tests**. Also include the **two figures** specified below. Make sure to reference your figures in the text and give them appropriate captions. Refer to the course *Writing guide* on moodle for a detailed refresher on the contents of a Results section, and the *Figure guide #1* and/or *Basic stats guide* for info on making graphs and performing t-tests, if you need them.

PS - I have cleaned up and organized the lab data spreadsheet to facilitate the assignment, and I added data from last year's class, but I didn't change any of the values we collected.

Detailed instructions:

(1) Comparison of mean heart rate before and immediately after exercise. Include outcome of a statistical comparison (paired/correlated samples t-test), and a bar graph (Figure 1) showing the difference between the two treatments, with error bars (95% confidence intervals or standard errors). \*NOTE: this is the comparison we did together in class. Your output should be the following (this is from VassarStats; make sure you actually do it yourself to check and make sure you are using your statistical software correctly!).



- (1a) Describe in words how the mean heart rate changed over time from immediately after exercise to 120 s post-exercise. You do not need to perform any stats or make any graphs for this.
- (2) Comparison between men and women of the mean proportional increase in heart rate after exercise. I have added a column to the class data sheet with this variable (labeled "proportional increase" this is just immediate post-exercise heart rate / pre-exercise heart rate). Include the outcome of statistical comparison (independent samples t-test).
- (3) Comparison of mean resting heart rate before simulated dive and during simulated dives. Include the outcome of statistical comparison (paired/correlated t-test), and a bar graph (figure 2) showing the difference between the two treatments, with error bars (95% confidence intervals).
- (4) Comparison of mean resting heart rate before breath holding and during breath holding. Include the outcome of statistical comparison (paired/correlated t-test).

## **GRADING RUBRIC FOR THIS ASSIGNMENT:**

## Content (1%)

Results are described clearly and in appropriate detail in paragraph form (0.5%) All required statistical tests are clearly reported in the text (0.25%) All required figures are included and are readable, informative, properly captioned, and

referenced in the text (0.25%)

## **Presentation (0.5%)**

Text is written in scientific style (0.25%) Grammar and spelling are correct (0.25%)