**Statistical Analysis**

In your proposal you are asked to describe statistical tests for significance that you will perform on the data that you collect in the evaluation of your device. Below are two examples of such a description. Note that each example identifies the following.

1. What data will be collected.
2. How many times the measurement will be repeated.
3. What statistic will be examined through the hypothesis test (e.g. comparison of mean value of tree circumference between Forest A and Forest B).
4. What statistical test will be used.
5. What null hypothesis will be tested.
6. What alternative hypothesis will be used.
7. What value of the probability statistic is considered significant.

*Example description of Student’s T Test*

Pressure drop will be recorded at the given flow rate 5 times for the two stenosis lengths. The null hypothesis, that pressure drop does not depend on stenosis length will be tested by comparison of the mean values of pressures through a one-tailed unpaired Student’s T test, assuming equal variances, under the alternative hypothesis that pressure drop is larger for longer stenosis. The result will be considered significant for p values less than 0.05.

*Example description of Pearson’s Correlation Coefficient*

Pressure drop will be recorded at 7 flow rates, ranging from 2 ml/sec to 15 ml/sec. A linear least squares fit of these data will be performed, and the Pierson’s correlation coefficient from this fit will be evaluated to test the hypothesis that pressure drop depends on flow rate in the range of flow rates examined. The null hypothesis is that pressure is not a function of flow rate. Results will be considered significant for p values less than 0.05.

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