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**COURSE**: DEMOGRAPHY & BIOSTATISTICS (STA312)

ASSIGNMENT

1. Hypothesis testing is a procedure in statistics whereby an analyst tests an assumption regarding a population parameter. The methodology employed by the analyst depends on the nature of the data used and the reason for the analysis.

2. **Classical Approach** for hypothesis testing computes a test statistic from the empirical data and then makes a comparison with the critical value. If the test statistic in this classical approach is larger than the critical value, then the null hypothesis is rejected while the **P-value** is a number that tells us how unusual our sample results are, given that the null hypothesis is true. It is the probability that the computed value of a test statistic is at least as extreme as a specified value of the test statistic when the null hypothesis is true. Thus, the P-value is the smallest value of $\alpha$ for which we can reject a null hypothesis.

3. <u>Importance of Hypothesis Testing in Research</u>

   Hypothesis testing is one of the most important concepts in research because it is how you decide if something really happened, or if certain treatments have positive effects, or if groups differ from each other or if one variable predicts another. Basically, it is required if you need proof to show that your data is statistically significant and unlikely to have occurred by chance alone. A hypothesis test can be said to be a test of significance.