**Introduction**

For this activity, you will be working with NCAA Division I Lacrosse faceoff percentages. Comparing the league average to a specific team, you will see how they performed in comparison.

**Learning Goals**

By the end of this activity, you will gain an understanding of one sample proportion hypothesis testing.

**Data**

The data for the module is from the NCAA Division 1 Lacrosse 2022-2023 season and contains 72 rows and 22 columns. Each row represents a different Division I lacrosse team and with a multitude of variables pertaining to team performance throughout the season. For this activity, you will specifically be working with the total faceoffs and faceoff wins variables.

**Methods**

The only needed material is your preferred method for calculating p-values using the Z statistic.

**Exercises**

For all 72 teams at the Division I level in the 2022-20223 lacrosse season, the true population proportion for faceoffs won is 0.501.

1. As a team, Duke won 330 out of 548 total faceoffs. State the null and alternative hypotheses to determine Duke has a different faceoff percentage than the division.
2. What is the sample size and sample proportion?

1. Assuming the null hypothesis is true, does the sample pass the success-failure condition?
2. Calculate the test statistic for the sample.
3. Does this sample proportion provide evidence that Duke has a different faceoff percentage than what is normal for all of Division 1 Lacrosse teams in the 2022-2023 season using a significance level ⍺ = .05? Provide all necessary details and a conclusion in context.