

According to a study by Tufts University, 48.3% of U.S. college students voted in the 2016 General Election. A political science researcher wonders if the college student voter turnout is higher this year. She takes a random sample of 455 college students after the 2020 election and finds that 247 voted. Test the researcher's hypothesis at the $\alpha = 0.01$ level.

1. Define the population parameter and state the null and alternative hypotheses.
2. State and verify the necessary **conditions** for the hypothesis test.
3. Compute the **test statistic**.
4. Find the **p-value**.
5. State and justify your **decision** about the null hypothesis and write your **conclusion** in terms of the alternative hypothesis.