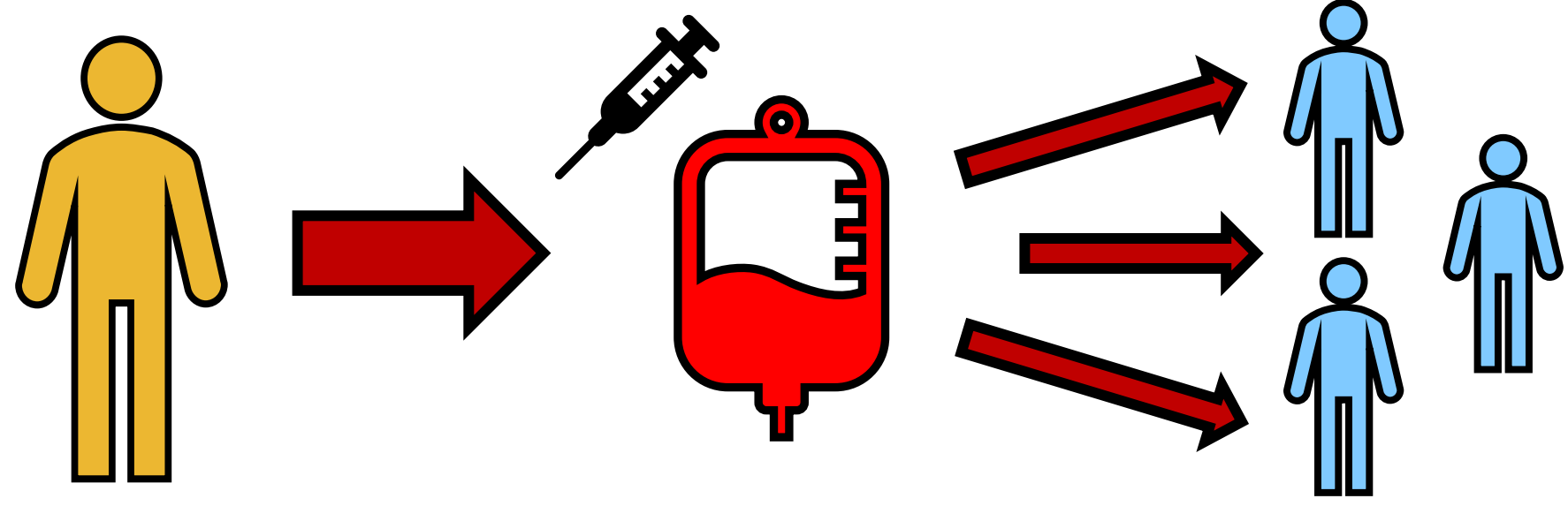


What Motivates Blood Donations? A Retrospective Outcome Analysis of Blood Drives at Post-Secondary Institutions in Southern Louisiana and the Mississippi Gulf Coast.

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Introduction

- The United States has experienced many recent blood shortages, especially after the 2020 COVID-19 pandemic.
- The Blood Center (TBC) is one of the primary blood collection agencies serving Southeast Louisiana and the Mississippi Gulf Coast. To meet the demands of over 50 hospitals and transfusion facilities in the Gulf South, TBC aims to stock a 3-day blood supply of 1200-1400 pints. Maintaining this supply requires an average daily collection of 350 pints. Increased usage and low donor turnout may result in hospitals canceling select elective surgeries until inventories reach stable levels regionally.



- Prior research has explored individual opinions and psychosocial elements that may affect donor turnout. However, limited studies have analyzed drive-level factors that could have influenced actual participation outcomes across a large subset of blood collection events. Thus, the present study retrospectively compares the outcomes of TBC blood drives with the goal of identifying drive characteristics that may positively and negatively impact future donor participation.



Hypothesis:

Retrospective analysis of donation statistics and blood drive variables will reveal significant relationships between several modifiable drive factors and measured donor participation.

Methods

- Data was organized and provided by TBC for all blood drives occurring from January 2022 to September 2025. The starting date was chosen to avoid drives that may have been affected by the COVID-19 pandemic. Drives chosen for this analysis originated from post-secondary educational institutions has been analyzed (n=237).
- Drives were separated into categories of interest based on institutional affiliation, time, location, incentive type, and concurrent activities. The average number of donations per drive and drive success rates based on prior projections were computed and compared to evaluate for statistically significant differences between categories.
- The Student's t-test was used to determine statistical significance, as equal variance was assumed among the sample populations.

Annual Donation Results

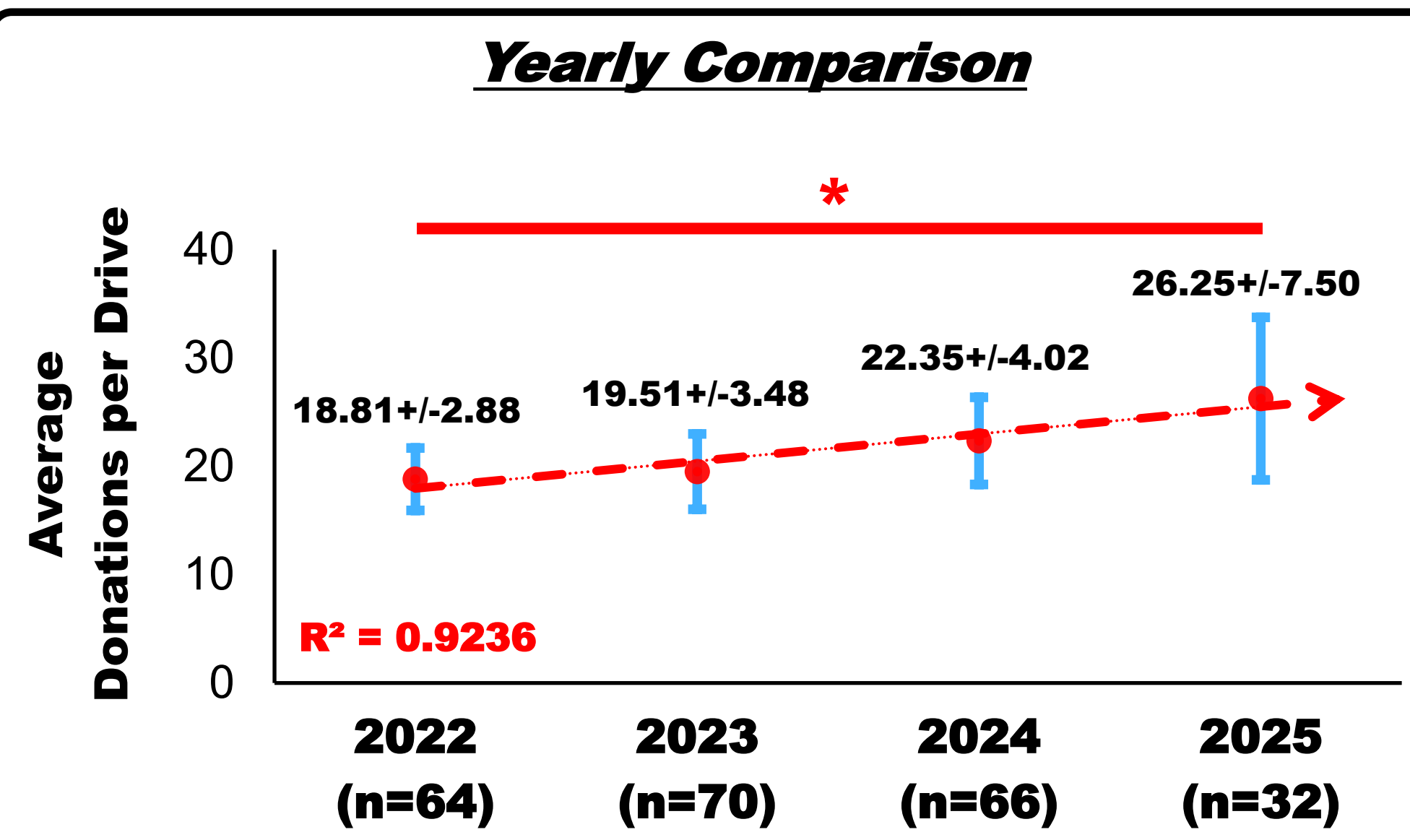


Figure 3: A graph showing TBC donations steadily rising from 2022 to the current day. Statistical significance was reached between n 2022 and 2025.

This research was conducted in collaboration with The Blood Center. The Blood Center provided no funding for this work, and we declare no financial conflicts of interest.

TBC Donation Sites

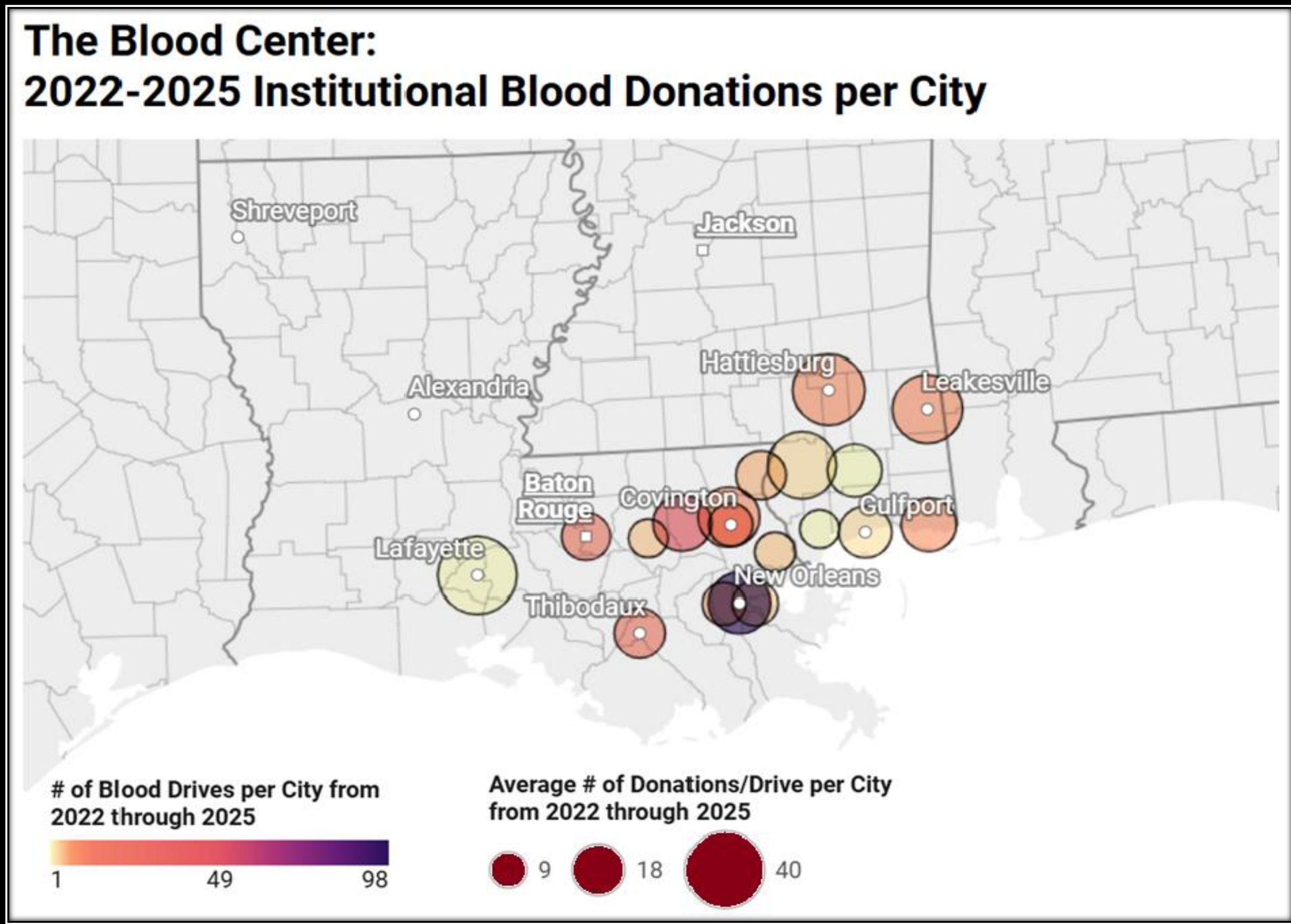


Figure 1: A symbol map showing city-wide drive densities and donation averages for all TBC blood drives in 2022-2025 hosted by post-secondary educational institutions.

2022-2025 Total Blood Drives per Institution

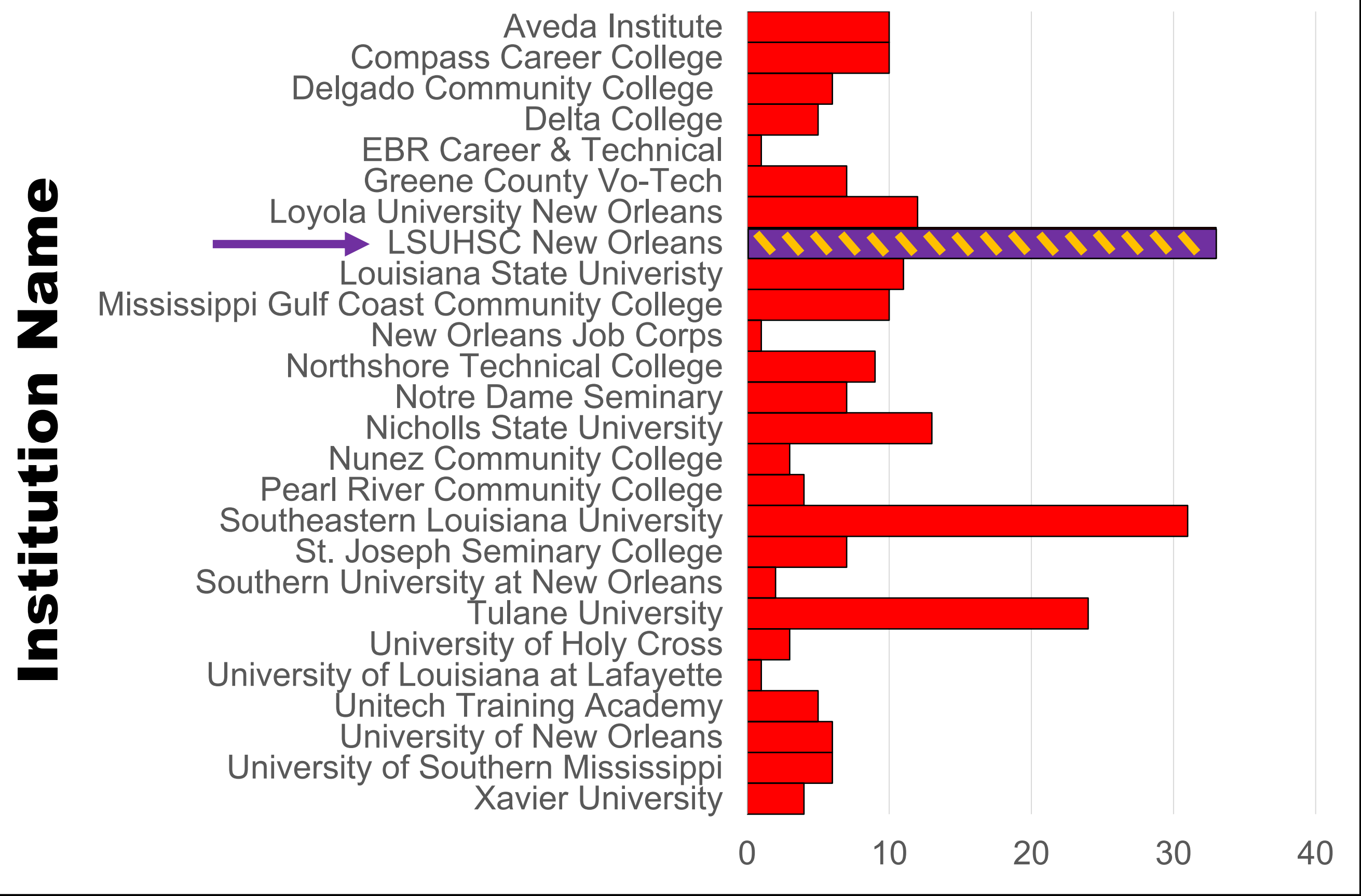


Figure 2: A chart displaying the total number of TBC blood drives hosted at each post-secondary educational institution from 2022 to 2025.

Top 10 Highest-Collecting Blood Drives			
Rank	Educational Institution	Date	Total Donations
1	LSUHSC New Orleans	08/5/2025	116
2	University of Southern Mississippi	04/12/2023	93
3	University of Southern Mississippi	10/30/2024	89
4	LSUHSC New Orleans	08/01/2023	83
5	LSUHSC New Orleans	02/17/2025	78
6	LSUHSC New Orleans	10/22/2024	77
7	LSUHSC New Orleans	03/25/2022	76
8	LSUHSC New Orleans	01/09/2024	68
9	LSUHSC New Orleans	08/01/2024	57
10	LSUHSC New Orleans	10/20/2022	51

Table 1: A table ranking the top 2022-2205 TBC college blood drives.

Seasonal Donation Results

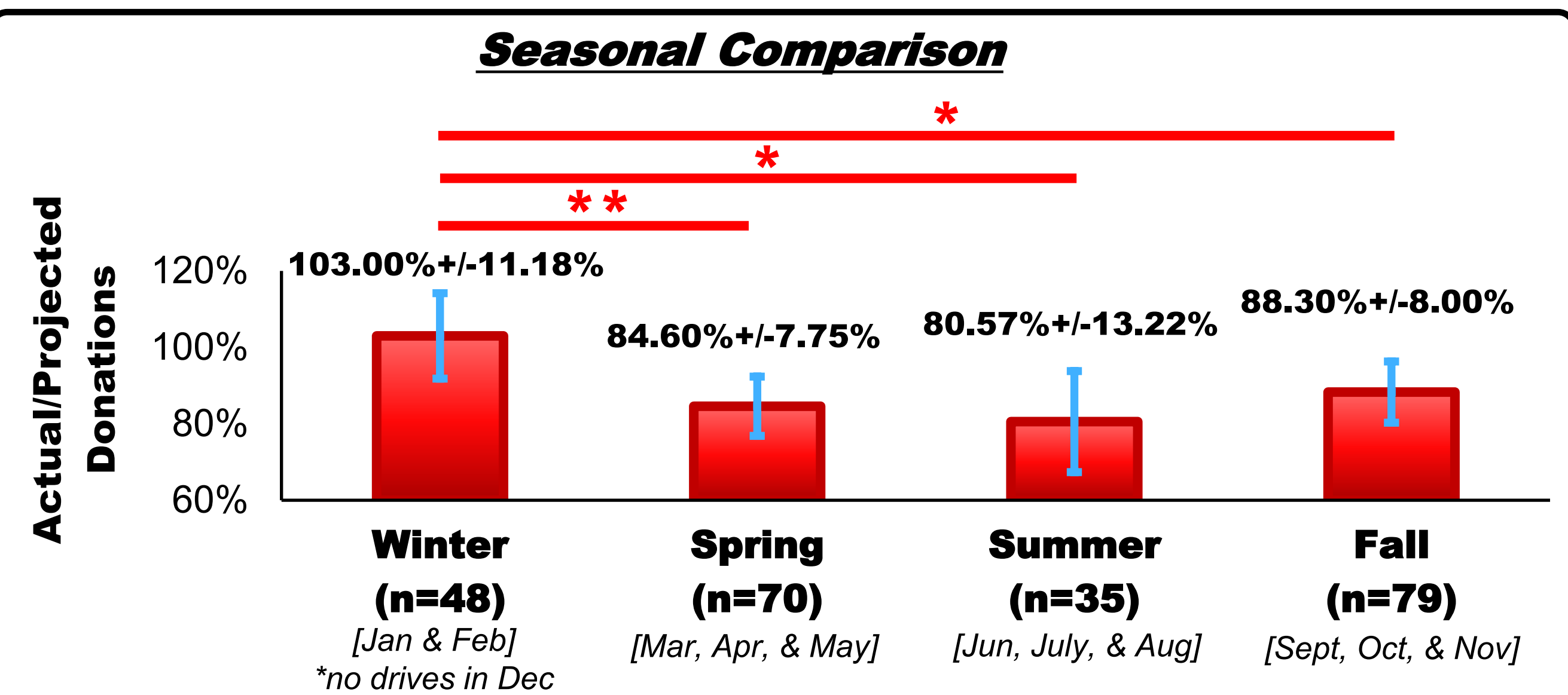


Figure 4: A chart demonstrating that the ratio of actual donations to TBC projections significantly increased during the winter season compared to every other season.

Drive Characteristic Analysis Results

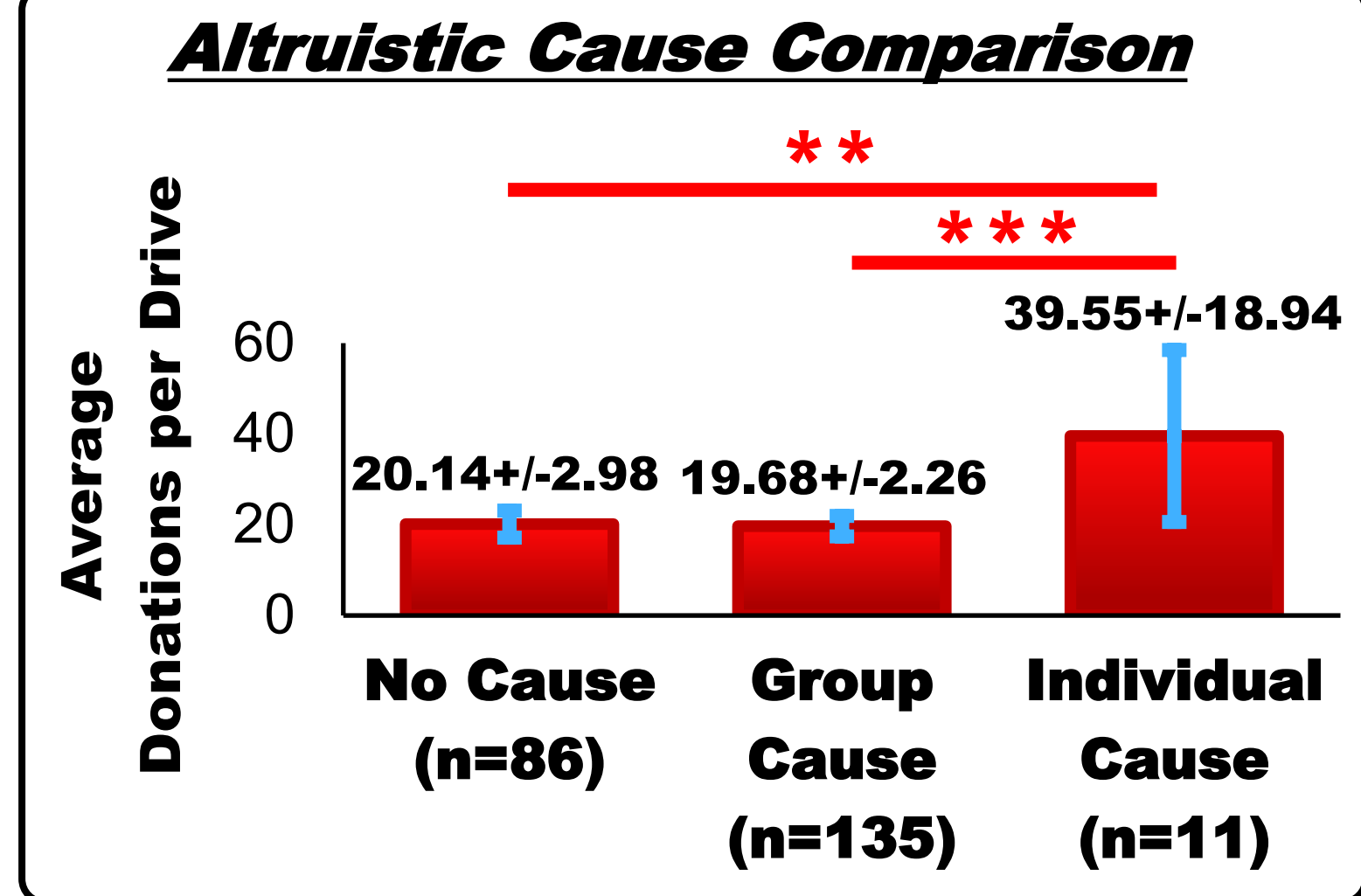


Figure 5: A chart showing significant donation increases for altruistic individual causes (memorial/ replacement drives) over group causes (charity funding) or no cause.

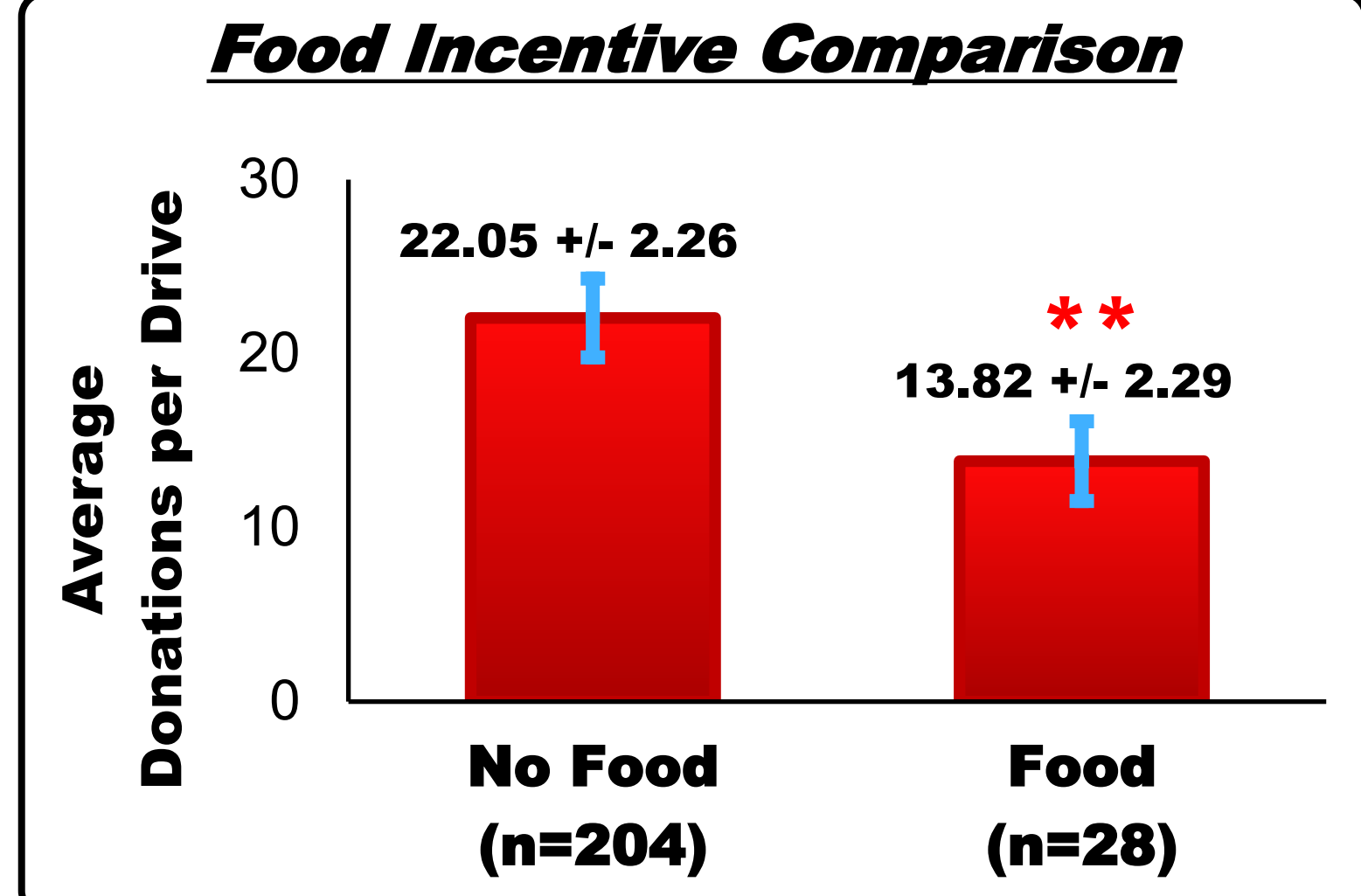


Figure 7: A chart showing significant donation decreases when drives offered food or candy as an incentive for donating, apart from the standard post-donation snacks.

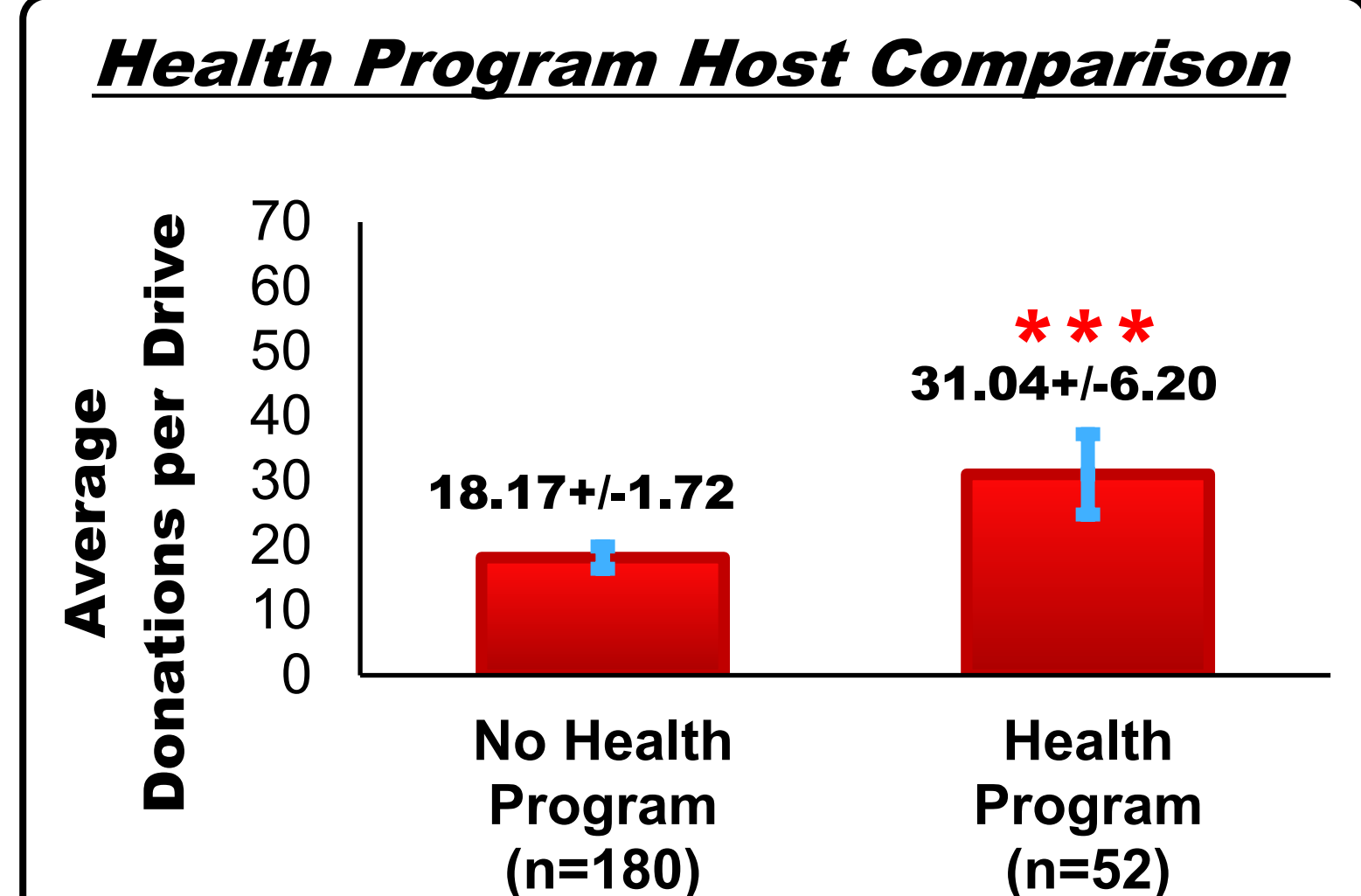


Figure 9: A chart showing significant donation increases when drives are hosted by a health program.

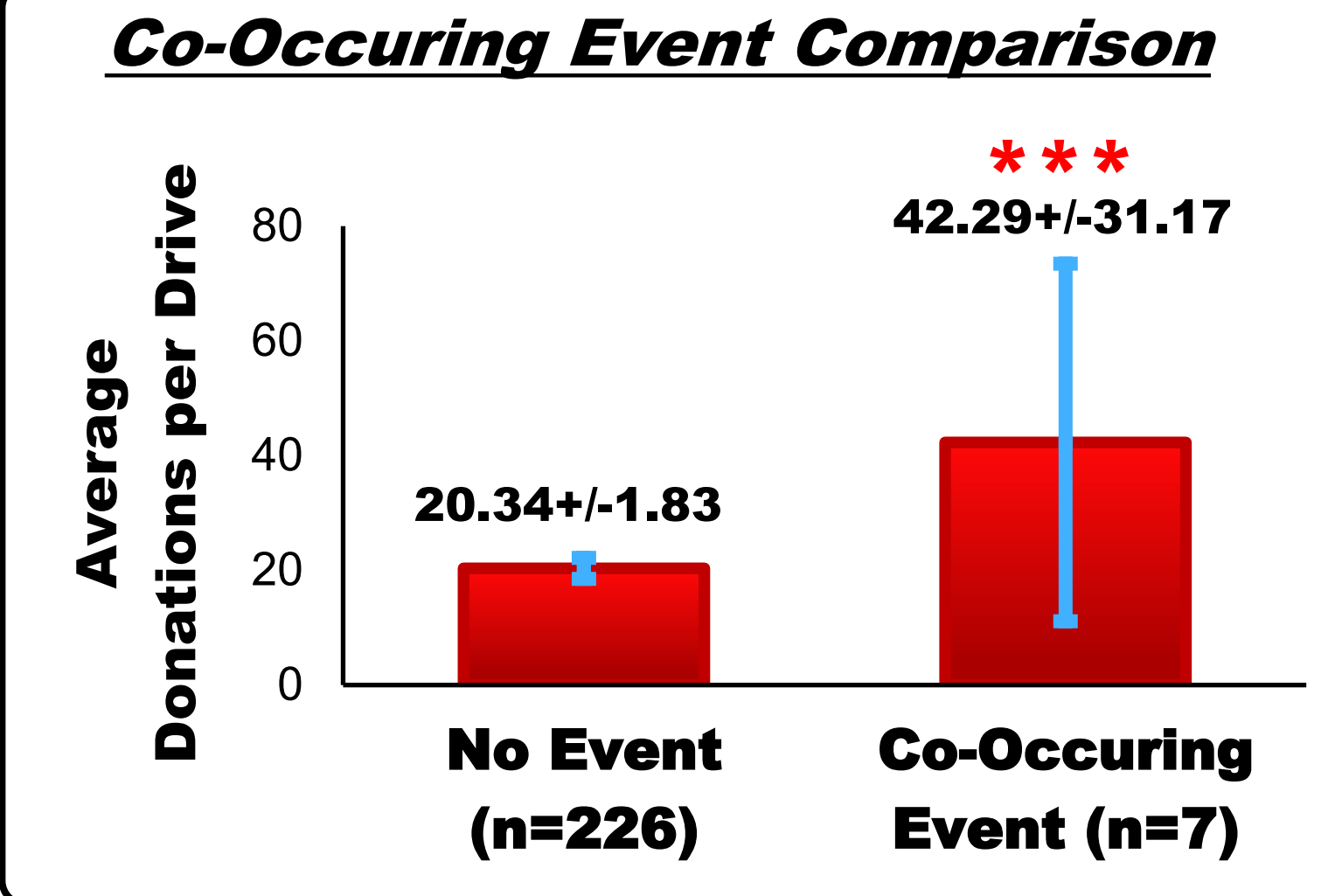


Figure 6: A chart showing significant donation increases for events (e.g., health fairs) co-occurring within the vicinity of a blood drive.

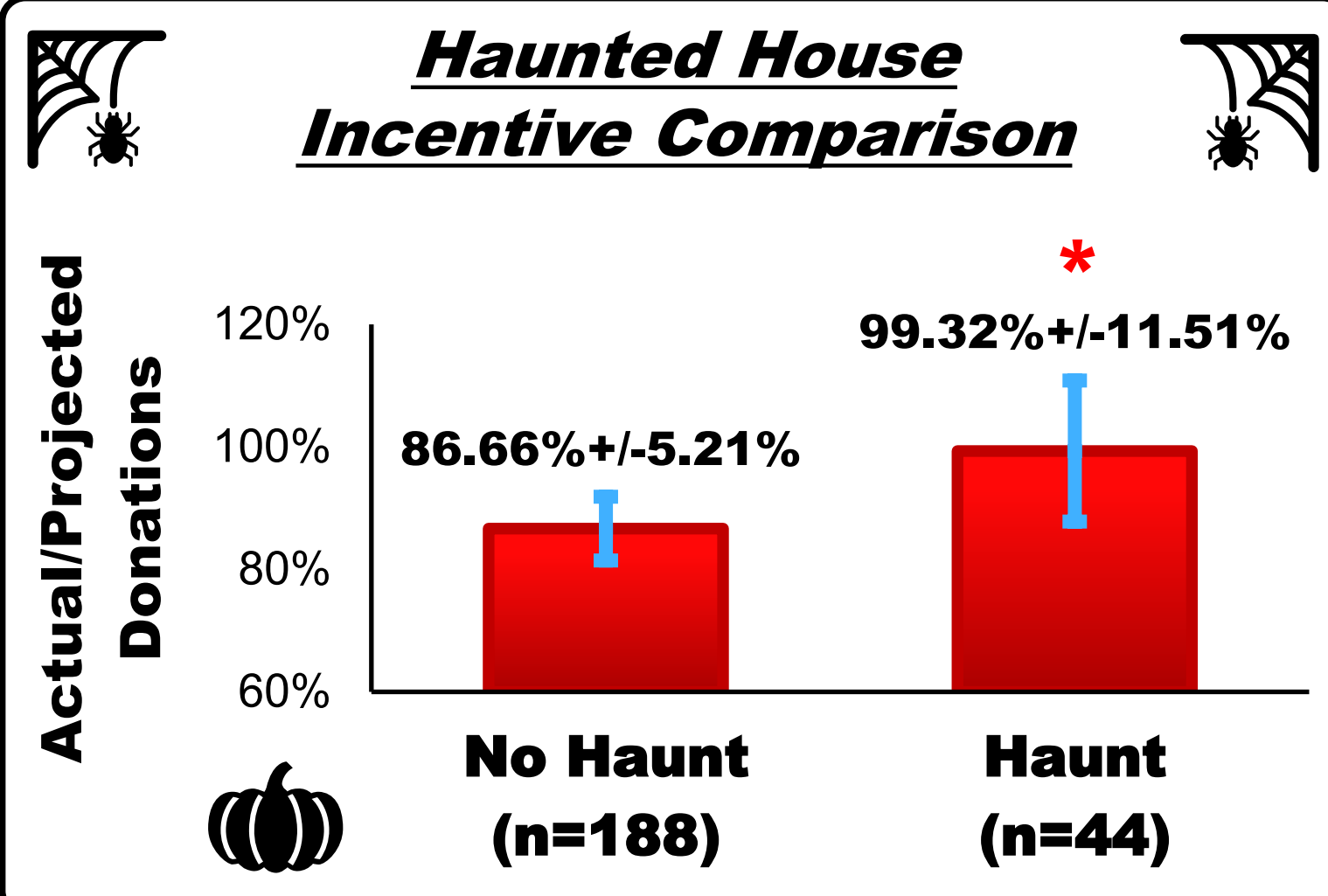


Figure 8: A chart demonstrating that the ratio of actual donations to TBC projections significantly increased when offering free passes to a Halloween haunted house.

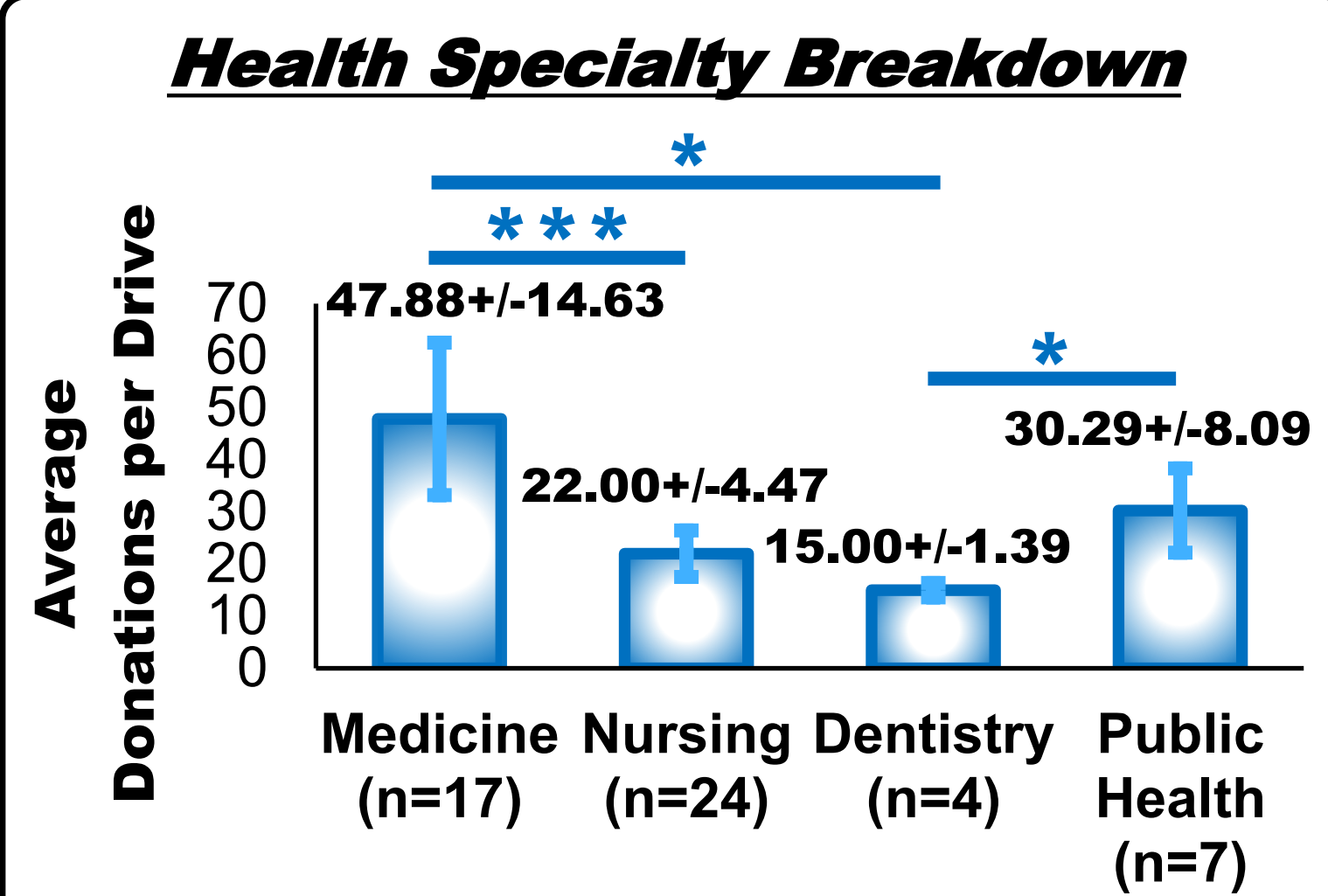


Figure 10: A chart breaking down the health program association of a blood drive by program specialty.

Conclusions and Future Work

- The most successful blood drives with regard to the largest number of collected units were held at LSUHSC New Orleans and the University of Southern Mississippi (USM).
 - The LSUHSC New Orleans drives mainly targeted students enrolled in a health program, who may readily donate based on their understanding of the importance of community's blood supply maintenance. The LSUHSC New Orleans drives have also employed various factors found here to be associated with significant donation increases, such as the honoring of an individual through a memorial drive (e.g., James B. Miller III Memorial) or incentivizing donations with a Halloween Haunted House pass.
 - The large drives held at USM were centered around a friendly competition between the air force and army cadets. The success of these competition-centered drives suggests that the other blood drives may be even more successful if they incorporated a friendly competition into future drives.
- The negative impact of food incentives suggests that these resources could be better utilized elsewhere, such as summer advertisement funding since projections underpredict actual donations at this time of the year.
- Data analysis is ongoing from blood drives within overall communities and for appointment follow-through rates. Prospective work will be needed to scrutinize the characteristics analyzed here at future drives.

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Significance Legend: p < 0.05 represented by * / p < 0.01 represented by ** / p < 0.001 represented by ***