



# Wind Energy on Saint Vincent Campus

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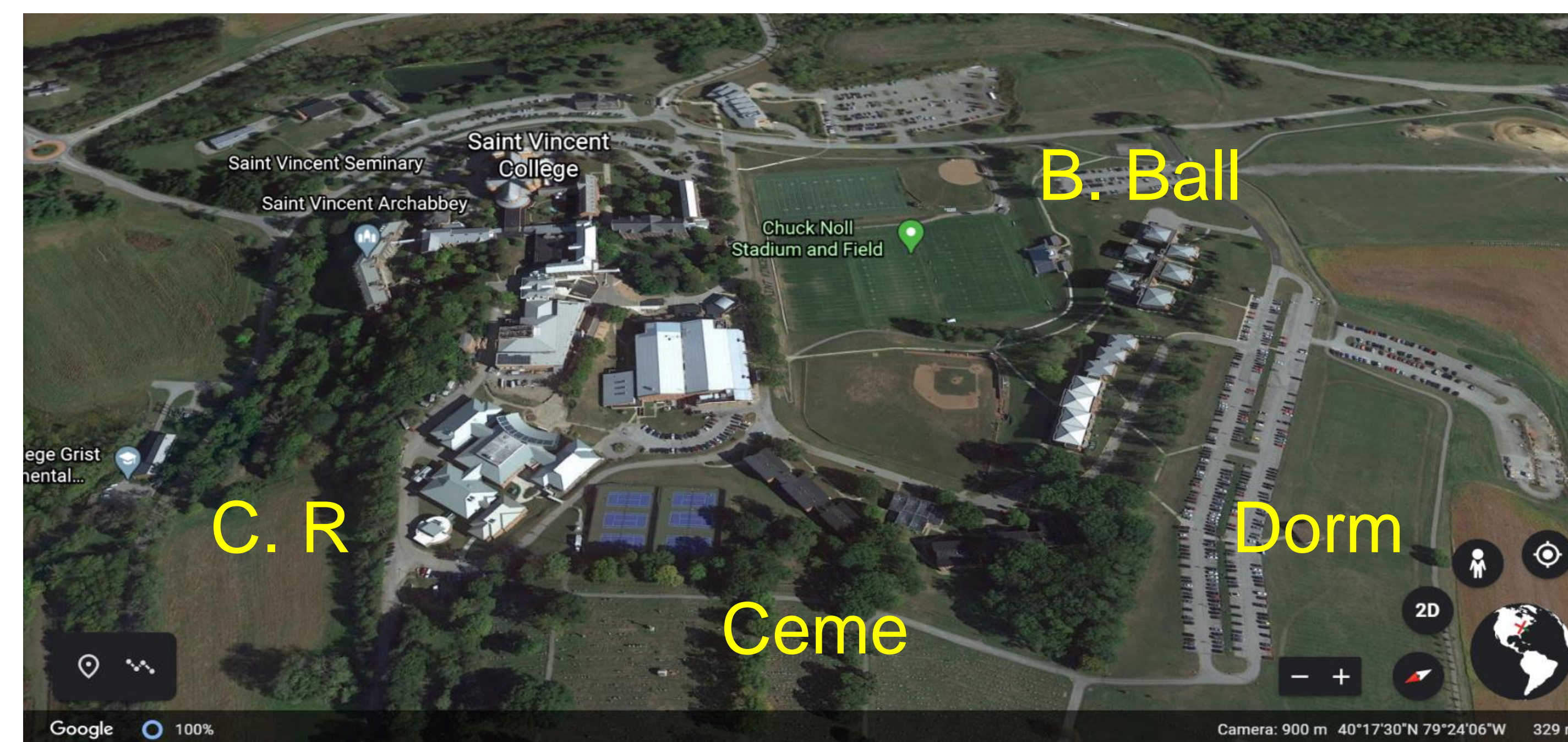
Environmental Science Program

## Introduction:

The study I explored over the fall semester of 2020 was determining the best location on Saint Vincent Campus to add a wind turbine to team with the solar energy on campus to make the college a greener campus as well as save the college money on their electricity bill. Using an anemometer, I measured wind speed of the four locations on campus: the fields behind the dorm rooms, along the construction route in the back of the science center, at the top of the cemetery by the tennis courts, and next to the basketball courts. These wind speeds were then analyzed and triangulated with data from Arnold Palmer Airport to know what the best location on campus for a possible addition of a wind turbine.

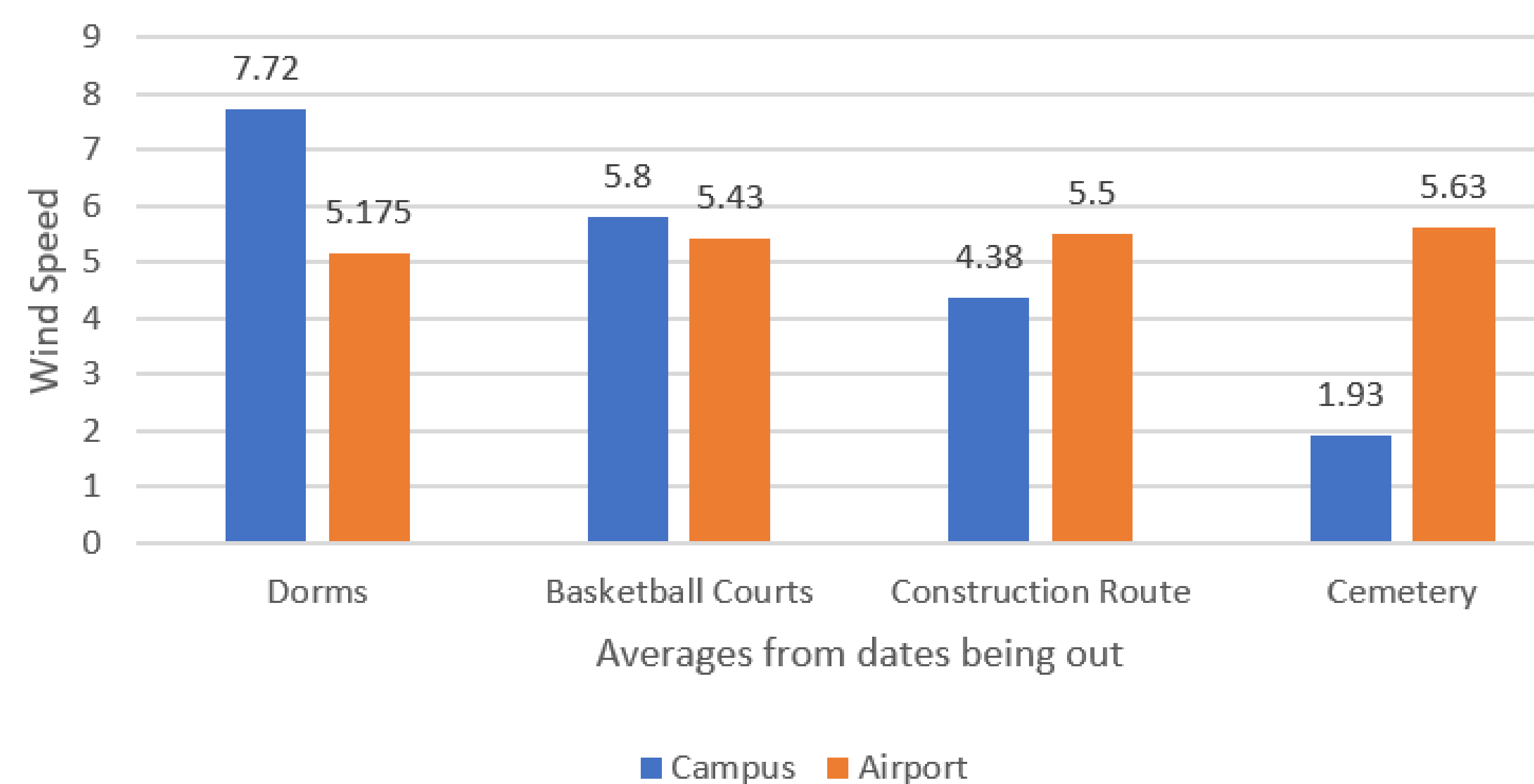
## Methods:

- To measure the wind speeds, I used a Kestel 5500 with a tripod attached to it. The wind speed was taken every second. The wind speed was taken in miles per hour.
- At each location, the anemometer was set out for about three to four hours each time.
- Each day I chose to set it out I rotated the anemometer around to the four different locations once a day.
- The data was then taken from the anemometer and transported to an Excel where it was organized and patterns in wind speeds were found.



## Results:

Average Wind Speeds on given days Kestrel 5500 was placed in four-locations on Campus.



- The graph shows the average wind speeds from all the days I collected data versus the airport data average for the days.
- The closest comparison and highest value out of the four spots on campus was the dorms.

## Discussion:

Throughout the fall semester the data I collected from the anemometer was collected and compiled to be able to compare the different sites it was at and overall compared to the data from the airport. The data from the airport was an average of all the days the anemometer was out at each different sight. The average wind speeds were then compared to the average wind speeds throughout the middle part of the days at the airport. The data showed that the best area in which to put a wind turbine if the college would ever consider adding one to cut down on energy costs would be the area by the dorms. The airport data was used to adjust the speeds so they can be compared to the data I collected from campus. When looking for the best area on campus the highest wind speed (after adjustments) would be the best location which I found to be behind the dorms. There was around a 7.72 mph average of wind speed over the course of the days data was taken. Therefore, my data shows that the best area in which to add a wind turbine to campus would be behind the dorms.

In a previous study done by a college student at Saint Vincent they found that there was about 360 KW of energy that can be produced from the area behind the dorms.

## References:

- Wind Energy on Saint Vincent Campus, Hadiya Harrold, 2017.
- Weatherspark.com. (n.d.). Retrieved April 10, 2021, from <https://weatherspark.com/y/149842/Average-Weather-at-Arnold-Palmer-Regional-Airport-Pennsylvania-United-States-Year-Round>