

# ANTHROPOGENIC NOISE ON THE UO CAMPUS

Margo Cumming, Nithi Deivanayagam, Josh Weinrobe

Clark Honors College, Research Mentor: Lisa Munger

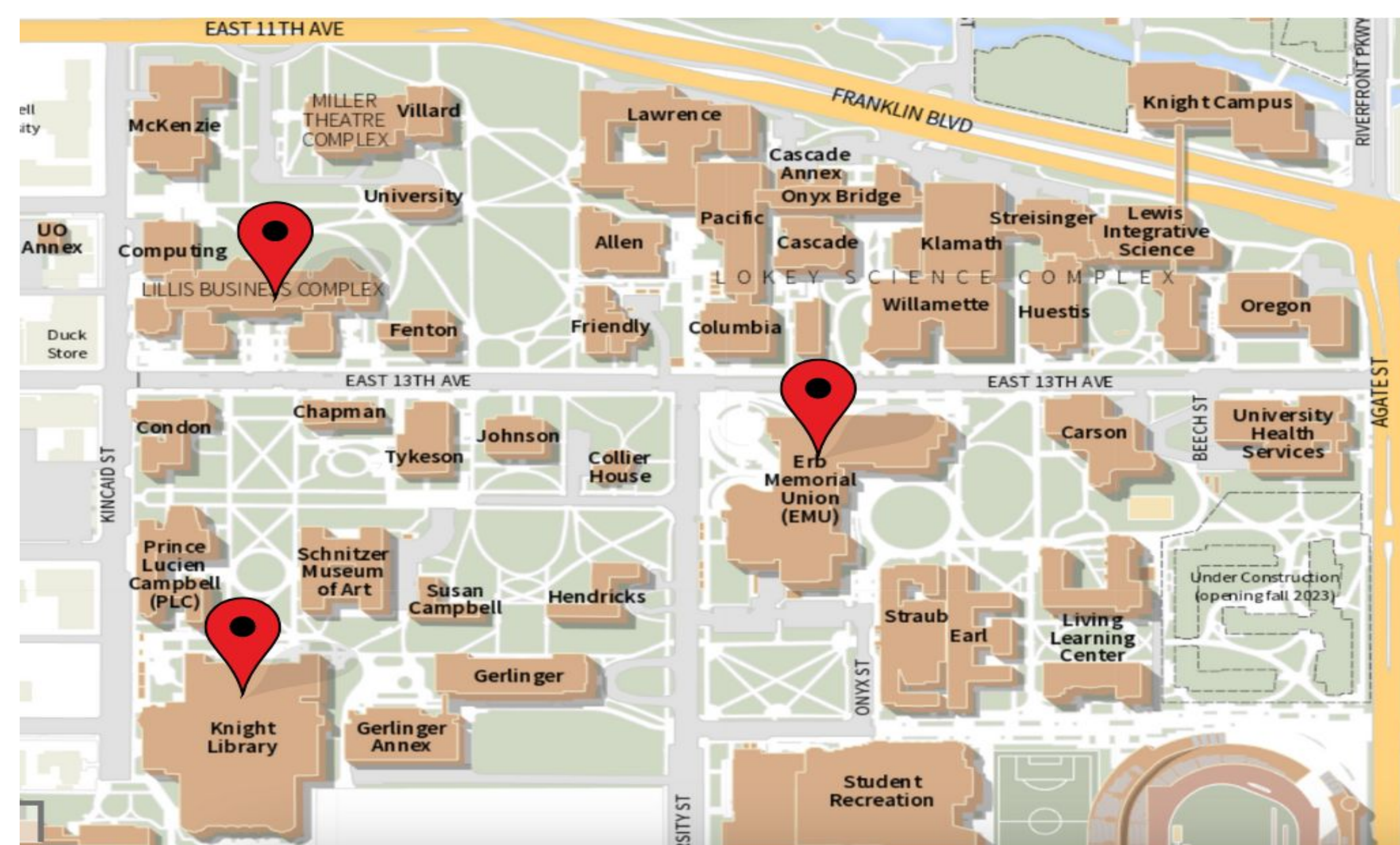


## Introduction:

Anthropogenic noise (noise created by humans) can affect the productivity of University of Oregon students (Mak & Lui, 2012). Different locations on campus have varying levels of noise production due to the changes in student activity and the social standards in each location. For example, it is expected students remain quiet in the library, but similar formalities are not practiced in the EMU or other campus buildings. We hypothesize that weather does influence anthropogenic noise production, specifically by impacting the amount of time students spend in buildings.

## Research Question

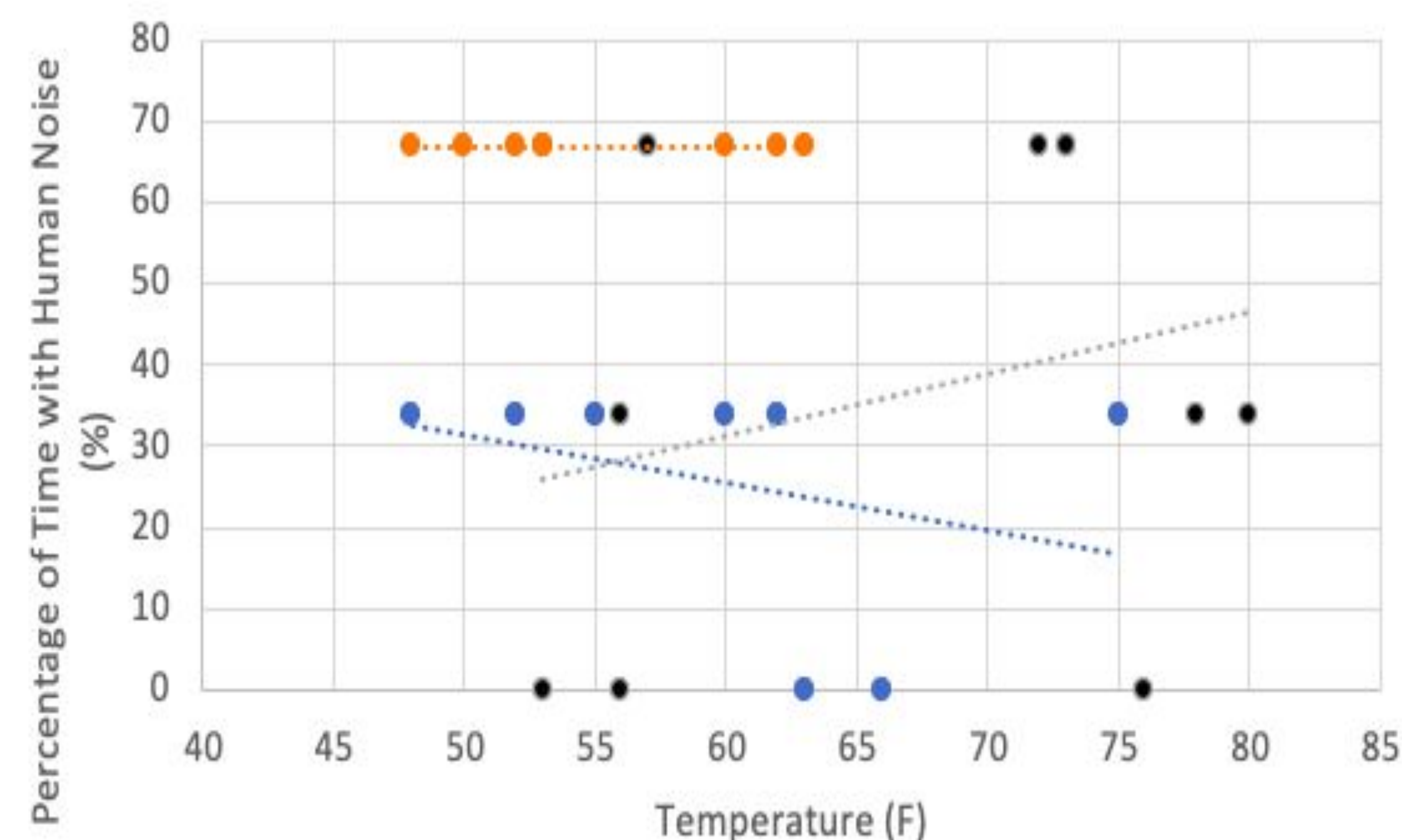
“Does the amount of indoor anthropogenic noise produced on the UO campus vary depending on the weather?”



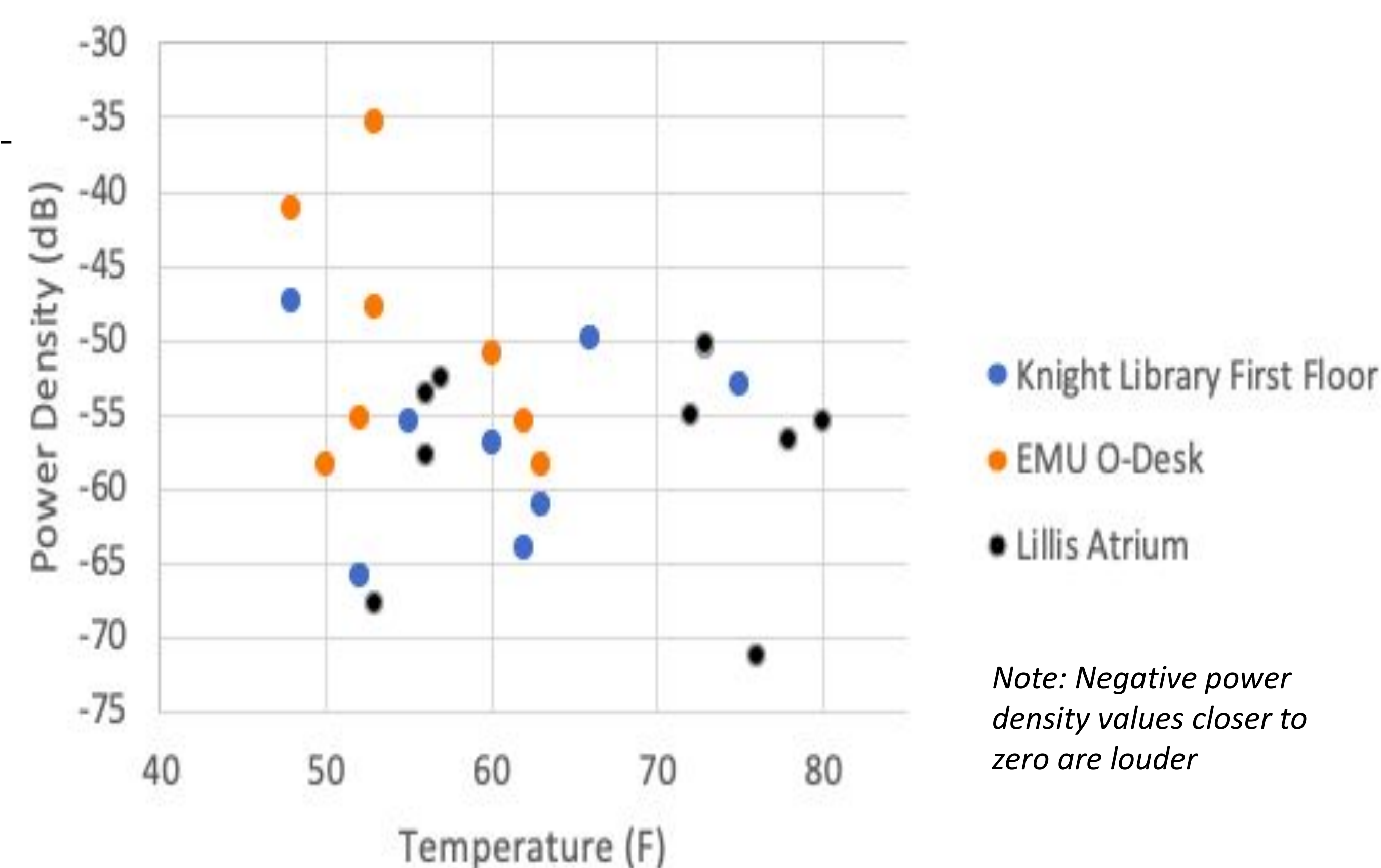
## Methods:

- Monitor weather and noise for 10 mins, 2 times/week
- Analyze a random minute from each recording for sounds under 5 kHz, calculating average power density and percentage of anthropogenic noise
- Use scatter plots to compare anthropogenic noise and weather depending on location, and draw conclusions about their correlation

## Temperature vs Human Noise



## Temperature vs Power Density

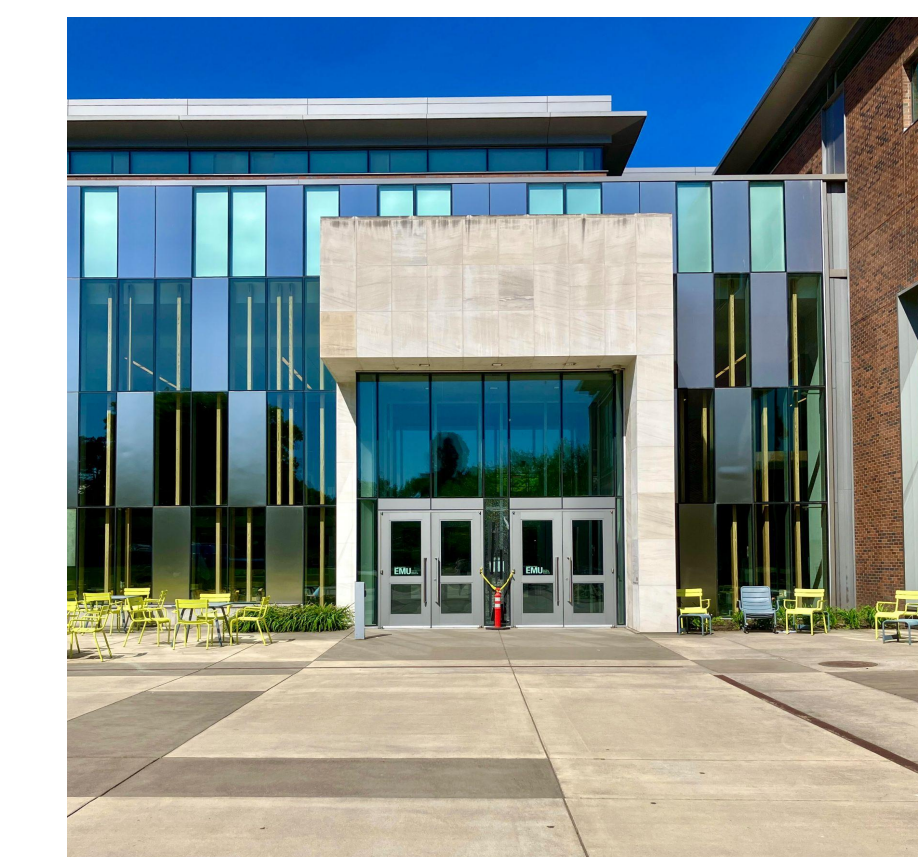


## Results:

- Indoor anthropogenic noise can be influenced by various factors, including weather and location
- In the EMU, there is less indoor anthropogenic noise on sunnier days
- In the Knight Library and Lillis Atrium, indoor anthropogenic noise did not vary significantly depending on the weather

## Conclusion:

- Weather patterns (temperature, climate, and humidity) can affect indoor anthropogenic noise levels
- Certain locations within buildings, such as those near high-traffic areas and mechanical equipment rooms, may be more prone to noise production than others
- Indoor anthropogenic noise is a result of human activity inside buildings, including conversation, music, computer sounds, and equipment noise
- As the outdoor temperature increases, indoor noise levels decrease slightly in the EMU, but not notably in the Knight Library or Lillis



## Limitations:

- Due to small research group size and short project time frame, we were unable to have more extensive data entry recordings, and could not cover additional locations
- Limited access to technology made additional data analyses difficult

## Further Research:

- Longer data collection period would establish a more precise conclusion on the correlation between weather and indoor anthropogenic noise on the UO campus

## References:

Mak C, Lui Y. (2012). The effect of sound on office productivity. *Building Services Engineering Research and Technology*. 33(3):339-345. doi:10.1177/0143624411412253