Previous research has established there is a seasonal effect on music preferences, which more generally suggests an environmental influence on music preferences as well (Pettijohn et al., 2010). This study sought to further assess some of these underlying concepts via an experimental approach, in which participants were placed in a virtual reality (VR) that simulated either a natural or unnatural environment.

54 participants (mean age=19.1) were recruited via the SONA Systems. The gender ratio of the group was 67% female, 33% male. The demographics of the participants were 56% white, 36% African-American, 5% Hispanic and 2% Native American. The participants were compensated with course credit and a $5 gift card.

While experiencing a nature or city VR environment, participants listened to a slow song (Xanny) and a more upbeat song (Bad Guy) consecutively by the same artist (Billie Eilish), and rated which song better fit their virtual environment. The sequence of the songs was randomly assigned to address its order effect. The participants also rated their familiarity with, and how much they liked, each song to evaluate the impact these factors had on their music preferences for the virtual environments.

Additionally, the participants were assessed for their baseline music preferences and their personal familiarity with their simulated environment to determine if these variables impacted the results.

### Results

The study found that participants in the natural environment simulation were significantly more likely to select the slower song, while participants in the unnatural environment simulation were significantly more likely to say that the upbeat song fit better in their environment, \(X^2(1, N=52)=14.73, p<.001\).

### Discussion

The results of the study suggest that environmental influences (simulated through VR) are related to music preferences.

Future research should seek to determine if musical influences impact environmental preferences by adjusting the study to show both environments to the groups, while one group hears the slow song, and the other hears the more upbeat song.