**SAMPLE ABSTRACTS**

PURPOSE

BACKGROUND and RATIONALE **250 words MAX**

METHODS

HYPOTHESIS

RESULTS

**First Last**

**Abstract**

**A Study of the Behavior of Western Gorillas (*Gorilla gorilla*)**

Western gorillas are a critically endangered species that live in tropical rainforests in Western Central Africa. The threatened state of these gorillas makes it imperative to study their behavior as this study may bring forth key information to improve the prospects for their survival in nature. The purpose of this investigation was to determine the effect of the western gorilla alpha male’s behavior on the spatial proximity of the other members of the group. Using data previously collected in the field the behaviors of the alpha male and his spatial proximity to other gorillas in the group was determined. It was hypothesized that the distance between the alpha male and the other gorillas would be greatest when the alpha male is engaged in the behavior of feeding and that the spatial proximity may correspond with social relationships that exist within the group. For example, the females in the group that have been observed consistently close to the male may either be high on the ranking list or mating with the male at that time. Based on a daily average distance, it was found that the female observed closest to the male is ranked second and the females observed the farthest are ranked third and fourth. In order to take the first step in the conservation of western gorillas, natural behaviors must be observed. These observations may be used to develop effective reserves and protection measures.

**First Last**

**Abstract**

**Investigating Climate Change: A Comparative Analysis of Colonial and Modern Weather Data**

The goal of this investigation was to determine the effectiveness of using colonial era weather data to study climate trends in the northeastern United States and to create a model for comparing historical weather data to modern data. One of the hottest topics facing our generation is developing a more complete understanding of global weather patterns. Recovering and utilizing all relevant and historical information is crucial for the development of models needed to predict future climate trends. Most information about weather prior to 150 years ago has been derived from secondary sources such as tree rings, ice cores, and coral reefs that only provide relative temperatures. Since the advent of standardized thermometers, in the early 1700s, much detailed historical information exists, but at this point has not been fully utilized. Reliable colonial weather data based on direct human observations offer a unique window into past climate conditions. The goals of this investigation were reached by comparing colonial weather data recorded near Philadelphia, Pennsylvania, by Phineas Pemberton, to data from 1878-1882 and 2005-2009 from Philadelphia, Pennsylvania. Results show that since the 1700s, not only have the average temperatures increased significantly, but the distribution of higher temperatures has changed dramatically. In 1759, 1767-1770, there was not one day over 90ºF, but in the 2000s in Philadelphia there were 45 days over 90ºF. Utilizing relevant historical data is crucial for the development of models to predict future climate trends. Colonial era data represents a potential source of untapped useful climate data.

**First Last**

**Abstract**

**The Effect of Feeding Artificial Sweeteners on the Behavior of Fruit Flies (*Drosophila melanogaster*)**

As erratic blood-glucose levels have presented problems to diabetics, more and more people have turned to artificial sweeteners such as Splenda, Sweet’N Low, and Equal as sugar substitutes. **The purpose of this experiment was to determine if and how these artificial sweeteners when consumed by fruit flies affects their behavior.** Behavior and activity were determined by measuring the speed of larvae, the fruit flies’ recovery time after exposure to carbon dioxide, and response to violent shaking. The fruit fly larvae were fed specific sweeteners in isolated containers. Larval speed was determined by recording the time it took for the larvae to travel a given distance. Recovery of the adult flies after anesthetizing them was done by exposing the flies to CO2 for 10 s and recording the time it took for the flies to return to their normal state. The adult flies were also isolated into canisters that were placed on a vortex for 5 s to create violent shaking. Time was recorded until the flies return to their normal state. **It was hypothesized that flies fed the artificial sweeteners would show different behaviors compared to flies that were fed a normal diet.**  **Results thus far indicate that Splenda has the most activity in the larvae of the flies because they traveled a given distance faster than Equal and Sweet N’Low.**

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