## From the Instructor

Posters are one of the most common forms of presenting research at scholarly conferences, and they must use a combination of visual and textual elements in order to convey information in an extremely concise format to a large, diverse, and possibly uninterested audience. Posters offer an excellent opportunity to examine how writers must use different techniques to appeal to different audiences, all within the same document. Unlike a paper, a poster must be visually appealing in order to draw the attention of passers-by. Deliberate design decisions have to be made regarding color, font, images, white space, and layout in order to attract viewers without distracting them from the content. Ms. Kango's poster hits all the right notes of using graphic elements to hook the reader and guide them to the argument and evidence.

With posters we often talk about the 2 minute, 5 minute and 15 minutes viewers. The 2 minute viewer needs to be drawn in and then be able to quickly find the research question, the argument and the conclusion. This viewer may be completely unfamiliar with the field of study of the poster. The 5 minute viewer will want to look at some of the evidence (often graphs or charts) that support the conclusion. The 15 minute viewer, who may be an expert in the field, will want to understand the full project and how this research ties in with the broader field. One exercise you could do with your classes would be to put Ms. Kango's poster on a large screen then give your students two minutes to find the research question, the argument and the conclusion. Discuss what elements Ms. Kango used in order to make that information easy for the two minute viewer to find. Next, give the students five minutes to identify her evidence. What tools did she use to make that evidence easily digestible? Does it make the reader want to become a 15 minute viewer? Finally, what would the 15 minute viewer get out of the poster? How does Ms. Kango direct the interested reader to more information?

Rebecca Kinraide
WR 150: Writing, Research, & Inquiry

## From the Writer

Many professional scientists and researchers are hesitant to accept results from citizen science as evidential data. Through the poster, "Cheetah Conservation Through Citizen Science," the concept of citizen science is shown to analyze mass data in a timely and cost-effective manner while still maintaining accuracy and credibility in order to help researchers develop more effective cheetah conservation programs. I participated in a project called the "Cheetahs of Namibia" where I spent an hour a week classifying animals in camera trap images. The information from me and many others was used to predict predator-prey populations so that researchers could design better cheetah conservation plans. Projects like these enable the public to make impactful scientific contributions. Thanks to Professor Rebecca Kinraide's WR 150 Citizen Science course, I was able to make a more impactful contribution towards cheetah conservation by teaching others how the general public can help organizations make better conservation programs.

**KOMAL KANGO** is a rising junior from Needham, Massachusetts. She is pursuing a double major in Biomedical Engineering and Computer Engineering at Boston University. As an activist for animal conservation and protection, Komal has always tried to help the cause through efforts ranging from clean-up projects for the 2010 Deepwater Horizon Oil Spill to donations to the Sheldrick Wildlife Trust.

# Cheetah Conservation Through Citizen Science

Komal Kango, Citizen Science, Boston University

## **Introduction**: What is Citizen Science?

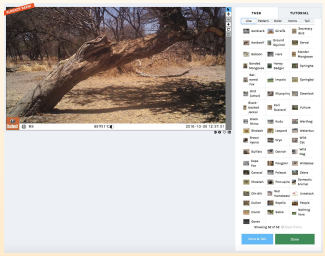
**Citizen Science is the system of outsourcing the collection and analysis of mass data to the public.** Citizen Science projects are administered by professional scientists who conduct research by using volunteer labor. It is used to make data collection and analysis cheaper and more time efficient for the researcher.

## Cheetahs of Namibia Project

The goal of the project was to create **more effective conservation programs to protect cheetahs**, other carnivores, and the ecosystem through the **outsourcing of camera trap classifications** to volunteers. Volunteers classified various species in the Greater Waterberg Landscape in Namibia and the researcher used this to predict predator and prey populations[2].

## Methods

The citizen science project worked by having the participants classify animals by species.



There were 54 options of species, each accompanied by example images of the species to educate participants and make the classifications more reliable. There was also the option of saying there was no animal present. Participants could classify more than one animal in the image and were asked to click the right animal multiple times to reduce random mistakes.

## Classification Trial Data

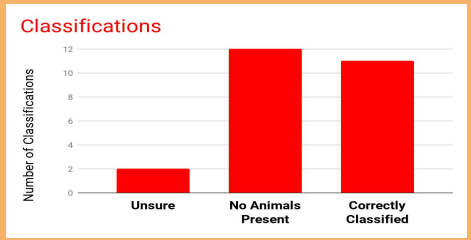
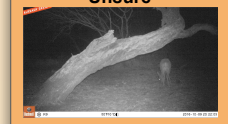
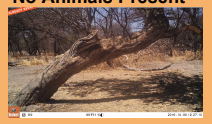



Figure 1: The graph on the left displays a 10 minute session where a new participant made 35 classifications for a camera trap project similar to the Cheetahs of Namibia Project

**Unsure**



**No Animals Present**



**Correctly Classified**

Displayed above are the 3 categories of classifications. The first image shows an animal that can be classified as either a dik-dik or duiker. Because of images like this, participants are unsure of their classifications and the reliability of the results is questionable. The PI addresses these inaccuracies by grouping the animals into small antelope and large antelope categories[3].

## Benefits and Challenges of Using Citizen Science for this Project

Benefits:

- Mass Data Analysis
- Cost / Time Effective

Challenges:

- Inaccuracies/ Credibility

### How the Researchers Address these Challenges:

To account for **inaccuracies**, the principle investigator of the project, Dan Beringer, confirmed that **each image is classified by 10 participants and if there is no consensus within these votes, then the researcher will reclassify the animal**. Some of the similar species are also grouped into a small antelope and large antelope prey category[3] to reduce varying results.

Dan Beringer also commented on the **credibility** of the project explaining that the Cheetahs Conservation Fund will determine if the results are credible.[3] Professionals will review the images that had little consistency within the 10 votes to make the data more credible.

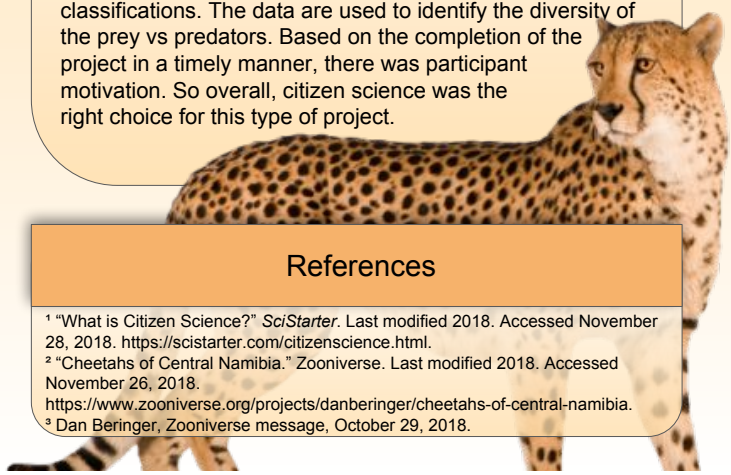
## Personal Participation


Figure 2: The graph above displays my personal participation where I classified animals for an hour a week. There is generally an upward trend that levels out with the exception of a dip at week 6 where I was distracted by midterms. The upward tend is due to my improvement in speed as I classified more animals and no longer needed to search for the right animal. I did not experience volunteer fatigue.

## Conclusion

**Citizen Science was the Right Choice for this Project!**

There were many benefits of using citizen science for this project and the researchers accounted for the challenges. **Citizen science allowed the researchers to get large quantities of data in a short amount of time and the data was effectively analyzed by the participants**. The inaccuracies were accounted for by grouping similar species and having the researchers reclassify inconsistent classifications. The data are used to identify the diversity of the prey vs predators. Based on the completion of the project in a timely manner, there was participant motivation. So overall, citizen science was the right choice for this type of project.



## References

[1] "What is Citizen Science?" *SciStarter*. Last modified 2018. Accessed November 28, 2018. https://scistarter.com/citizenscience.html.
[2] "Cheetahs of Central Namibia." Zooniverse. Last modified 2018. Accessed November 26, 2018. https://www.zooniverse.org/projects/danberinger/cheetahs-of-central-namibia.
[3] Dan Beringer, Zooniverse message, October 29, 2018.