“Primates in Peril”: An Investigation into the Conservation of Wild Primates

Primates are one of the most vulnerable groups of mammals, with over 50% of primate species and subspecies listed as vulnerable, endangered, or critically endangered. Given their small population sizes and slow life histories, primates are predisposed to having high extinction risk. When coupled with threats of climate change, habitat loss, poaching and zoonotic diseases, dozens of primate species are expected to go extinct within the next 50 years, including all of the species of great apes. In order to raise awareness about the primate conservation crisis, the International Primatological Society creates a list featuring the 25 most endangered primates in the world. This document called *Primates in Peril* has been released every 2 years since 2000. However, given that there are many dozen critically endangered species (a designation for species facing an extremely high risk of extinction in the wild), it is unclear how species are chosen for inclusion on this list. For this project, I will start by evaluating different metrics that are used for determining the conservation status of primate species. I will then apply these different scientific metrics on published primate data and construct my own list of the 25 most endangered primates in the world. I will compare the published lists with my list to see how accurately they capture the most endangered primates in the world. I predict that there will not be a lot of overlap between the two types of lists and that the published lists will be subject to certain kinds of bias. For example, I expect that the *Primates in Peril* will exhibit much more geographic variation and have species from all primate continents whereas my list will be overwhelmingly populated by species from Madagascar and Asia which are primate extinction hotspots. The end goal is to find the best metrics that could accurately assess the ranking of the most endangered primates.

I will then apply the best conservation metrics on a smaller scale in Kibale National Park (KNP), Uganda. Over the second summer, I will collect data on the 13 species that live in KNP and create a list ranking the 13 species of primates living there in order of most to least vulnerable to extinction. The potential impact of my research would facilitate a better understanding of primate species that have the greatest conservation need. It would also indicate whether *Primates in Peril* accomplishes what it

sets out to do and ultimately lead to recommendations for how primatologists and funding groups could effectively evaluate the conservation needs of primates in ways that reduce political and personal interests.

Until now, I have been involved in both the qualitative and quantitative sides of the research. Over the past semester, I have collected data to understand some of the biases that have gone into the inclusion of the species that have been in *Primates in Peril.* I have also examined how effective these lists have been in generating public and scientific interests in the selected species. I have developed technical skills in Excel, graphing and schematic tools, statistical tests, organizational skills for big data, and more general knowledge about the field of primate conservation. I hope to keep learning about all the facets of this project and specifically about the importance of conservation. I love and have an aptitude for this kind of work that involves organizing big data. However, with the help from the Laidlaw Scholars program, I hope to take my project to another level by learning how to do field research and hands-on conservation work.

So far, this project has given me the opportunity to lead my own research project steered by two inspiring individuals, Dr. Michael Reed and Dr. Zarin Machanda. This project is completely distinctive from my coursework and gives me a great sense of purpose and excitement, unique to this type of research. I hope to pursue this project throughout my undergraduate studies. This project not only has the potential to fill a current gap in the literature but will allow me to continue to reflect on the development of an idea, on data collection, on findings, and on their implications.

During my first summer, I will focus on two aspects of my research. First I will do literature reviews to compile data on primate conservation metrics to construct my list of the most endangered primates. I will also learn how to collect wildlife census data using Massachusetts fauna for training. The following summer, at the end of my junior year, I will continue my fieldwork research experience in Uganda at Kibale National Park. In the field, I will collect data to construct my own metrics from conservation biology that are most valuable in ranking endangered species. This would enable me to create a *Primates in Peril* at Kibale listing. Since most species at Kibale National Park are

threatened to differing degrees, applying my metrics on these primates would allow me to use my approach in a new way to a smaller group of species. In addition, while in Uganda, I would work with the Kasiisi project, a group whose goal is to aid in the education of youth and communities around Kibale in part to help protect the National Park. I believe that research should be shared by local participants and researchers alike. My role would be to share my knowledge with local students about endangered species and about endangered primates at Kibale and hopefully mentor some in becoming future researchers themselves. Over and over, I keep seeing how conservation is as much of a social issue as it is a biological issue.