According to the United Nations, there has been a staggering increase in the number of extreme weather events over the past twenty years, driven largely by rising global temperatures and other climatic changes. During this period, over 7,000 major natural disasters were reported worldwide, killing over 1 million people, and resulting in about $3 trillion in global economic losses. Moreover, the impact of these events is evidenced in the rapid decrease in populations of certain endangered species such as the Chinook salmon, North American tree swallows, common toad, and the lemurs etc., thereby threatening animal biodiversity and conservation efforts. Specifically, within this time frame, the wild ring-tailed lemurs at the Beza Mahafaly Special Reserve (BMSR), Madagascar have experienced five extreme weather events including severe droughts, extremely high rainfall, and flooding. In addition to population declines due to climate change and direct hunting pressure, this flagship species for conservation also faces significant habitat loss resulting in their reduced survival in the wild. Thus, as a prospective graduate student at the University of Cincinnati (UC), it is my interest to identify if gene regulation changes in response to shifting environments and predict the evolutionary responses of this species to climatic change.

My interest in ecology, evolution, and conservation dates to my master's research at Omo Forest Reserve, Nigeria where I witnessed firsthand the effects of human activities on natural forest areas. This necessitated my involvement in devising and promoting science-based conservation efforts geared towards the preservation of biodiversity. I carried out an independent study entitled; “Diversity and abundance of Avifauna with respect to Habitat types in Omo Forest Reserve, Nigeria”. My result findings reveal that forest specialists have a limited range with low abundance while generalists were found in all landscapes (including human-disturbed areas) with high abundance. For species to thrive in areas prone to human disturbances, they must quickly adapt to use other alternative food sources or habitats. I believe that my academic background and previous research experiences will set me up for grand success in further research, hence, my desire to pursue a Ph.D. in Biological Sciences at UC.

My choice of a Ph.D. program at UC was inspired by the fact that the institution offers students a balance of educational excellence and real-world experience; and the opportunity to learn from faculty who are highly ranked in their respective fields. Also, I am fascinated by the commitment of the institution to advance inter-disciplinary initiatives in existing and emerging communities of research excellence. Upon careful review of the webpage of the Department of Biological Sciences, I have no doubt that the strengths of this department are ideally placed to help me succeed in my research and career goals. In particular, the research interests of Dr. Kathleen Grogan align with my interest; the Grogan’s lab seeks to understand how genetic and epigenetic variation impacts inter-individual differences in fitness across environmental conditions. Thus, I can easily answer questions related to how human-induced disturbances affect genetic variations of primate species and learn new techniques and methods in studying variations in animal populations. I believe that the genetic tools that will be added to my skillset will be important for my future

research i.e., evaluating genetic factors influencing extinction risks in primates and understanding aspects of species biology important for conservation.

My immediate goal after graduate study is to continue research as a postdoctoral researcher developing further expertise in conservation genetics. In the long term, I will continue research in academia and work closely with governmental and non-governmental organizations in devising genetic management regimes needed to minimize the extinction risks of endangered species. Therefore, the Ph.D. program will help to lay the foundation needed to advance my career goals.