

The Impact of Changing Landscapes on Chronic Health and Diversity of Primate Communities

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My research applies genetic and genomic methods to the One Health paradigm to better understand how environmental factors may affect primate community health. Currently I address this problem by studying how South Africa's long term drought has affected the health, physiology, and gene expression patterns of wild vervet monkeys (*Chlorocebus pygerythrus*). For my dissertation research I focused on the genetics and health of the savanna-dwelling chimpanzees (*Pan troglodytes schweinfurthii*) at Toro-Semliki Wildlife Reserve in Uganda. I found a surprisingly high incidence of testicular dysgenesis syndrome within that population and concluded its prevalence could not be explained by genetic drift. I also integrated mitochondrial variation sampled in the Toro-Semliki population with published chimpanzee sequences from across East Africa. The savanna-dwelling chimpanzees at Toro-Semliki presented as a larger genetic population also spanning the closed-forest at Itwara Forest Reserve, complicating the theoretically hard evolutionary line between "savanna" and "closed-forest" chimpanzees. I will also present results from a pilot study of the primate diversity in Itwara Forest Reserve via camera trapping and a series of reconnaissance surveys spanning corridors, edges, and central forest regions, while opportunistically collecting chimpanzee fecal samples for DNA analysis. Initial image analysis shows the presence of six nonhuman primate species, which makes it an ideal site for future research on the effect that changing landscapes have on the health of polyspecific primate communities.

