I study molecular genetics and biology of the Asian elephant, *Elephas maximus*. Elephants are the largest living land mammals in the world, belonging to the family *Elephantidae* and order *Proboscidea*, with several unique features such as large body size, probosces that formed long muscular trunks, unique dental characteristics and tusks.

Tusks are unique modified teeth that appear to have evolved on only a handful of independent occasions in the evolutionary history of the animal kingdom. How did tusks evolve and why? What were the genetic and developmental changes that led to the modification of teeth into tusks? And what was the impact of their evolution on other aspects of the animals' existence such as their social interaction, mating and feeding habits? Our work is focused on the genetics of tusk development, more specifically, on identifying the tusk genes in elephants as a first step in addressing questions related to the function and evolution of tusks in elephants.

Another aspect of our study focuses on the relationship between biological stress and crop raiding behavior in the context of ecological factors such as altered habitats, variation in resource availability and antagonistic interactions with people. Inspite of the Asian elephant's protected status throughout its range, populations continue to be jeopardized as elephant-human conflicts escalate in many regions. While various habitat and biological factors have been proposed as drivers of conflict, chronic physiological stress in elephants may also play a role by creating a positive feedback loop between stress and conflict. Identifying specific drivers of stress is therefore important for framing appropriate conservation policies. We will assess the levels of stress hormones from fecal samples in wild Asian elephants across habitat and seasonal gradients and their correlation, if any, with conflict.