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Invasive species are a large and growing threat to ecosystem function, biodiversity and even human health. However, the traits that enable some species to expand their ranges and become pests remain understudied. The focus of the project is to ascertain how the world's most common songbird, the house sparrow, has been able to colonize most of the planet. Native to Eurasia, this species now is found on all continents but Antarctica. Some invasions are still ongoing, such as the one in Kenya that began about 50 years ago. Introduced to the coastal city of Mombasa, the species is spreading westward towards Uganda predominantly into areas occupied by humans. It is hypothesized that this range expansion is being facilitated by adjustments in physiological traits, namely sacrifices of expensive immune defenses. The emerging field of ecological immunology is revealing that contrary to intuition, animals do not always possess maximal levels of immune defense; in some contexts, such as during invasions, they appear to sacrifice particularly costly components to allocate resources to more immediately lucrative activities, such as reproduction. To test the hypothesis that invasions are fostered by sacrifices of immune defenses, comparative field and lab studies across Kenya will be conducted over several years. This interdisciplinary approach will involve modern technologies in a 'wild' setting, and will provide new insight into how to control animal invasions. The impacts of the work will be broad involving the joint efforts of American students and scientists, staff at the National Museum of Kenya, and native Kenyan schoolchildren and their teachers. In sum, the work will provide new information for an underexplored area of evolutionary biology, improve our ability to preempt invasions, and simultaneously reinforce scientific relationships in parts of the world where such networks are yet rare.