Assessment of rodent-borne zoonotic disease risk in rural Uganda

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Populations/Communities Served
Communities around Kibale National Park in the Kabarole District in western Uganda

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Project Goals
1. Assess rodent diversity across gradient of anthropogenic disturbance
2. Identify and characterize poxviruses, rickettsial agents, and protozoans circulating in wild rodents in western Uganda
3. Identify risk factors associated with disease prevalence and potential emergence in western Uganda

Hypotheses/ Expected Outcomes
1. Rodent diversity will decrease as habitat disturbance increases.
2. Wild rodents in and around Kibale National Park are infected with zoonotic pathogens.
3. Prevalence of zoonotic pathogens in wild African rodents is associated with anthropogenic disturbance. Loss of biodiversity will strongly correlate with pathogen prevalence.

Progress to Date
• Field work complete
• Giardia / Cryptosporidium
  • Immunofluorescent antibody assay to identify rodents with infections (ongoing)
• Poxvirus
  • ELISA assay for presence of antibodies to past Orthopoxvirus infection (ongoing)
  • PCR assay to identify presence of viral particles from current infections (ongoing)
• Rickettsia
  • Ectoparasites from domestic animals identified
  • Fleas from domestic animals assayed for R. felis and R. typhi (all negative)

Next Steps
• Giardia / Cryptosporidium
  • Molecular characterization
• Poxvirus
  • Western blot analysis
  • Viral neutralizations
• Rickettsia
  • Assay fleas from domestic animals for Bartonella, Coxiella, and additional Rickettsia
  • Identification of rodent ectoparasite samples

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