Epidemiology and Ecology of Zoonotic Enteric Pathogens Associated with Diarrheal Disease in the Greater Gombe EcoSystem, Tanzania

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**Team Members**
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**Project Partners**
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- **Centers for Disease Control and Prevention (CDC)**

**Populations/Communities Served**
Humans, their livestock and wildlife of the Greater Gombe Ecosystem, Kigoma District in Western Tanzania
- Gombe National Park Research Centre: Humans and wildlife; chimpanzees and baboons from two groups: central (Kasekela) and edge (Mitumba) communities.
- Mwamgongo village, a fishing community on Northern edge of the park (Humans and their livestock (goats and sheep) and dogs

**Project Goals**
- Determine prevalence and diversity of zoonotic parasitic and bacterial enteric pathogens among humans, livestock and wildlife
- Identify sources of infection and frequency and types of illness associated with infection
- Identify how human behavior, animal movement and changing land patterns modify transmission risk

**Expected Outcomes**
- Parasites or bacteria found in chimpanzees residing at the park border (edge), will be more genetically similar to those found in people and/or livestock, then would be expected by chance as compared to the central wildlife community.
- Habitat fragmentation, livestock movement and human behaviors may serve as risk factors in bringing humans, livestock and wildlife closer contact directly or indirectly (i.e. shared watersheds). At this interface there is increased risk for transmission.
- Concurrent SIV infection (Keele et al., 2009) among chimpanzees may increase the frequency and intensity of illness associated with a parasitic or bacterial infection as compared to SIV uninfected chimpanzees.

**Project Timeframe**
- **August 2009 - April 2010**: Project proposal development; discuss study implementation/logistics with in-country partners and secure appropriating permitting
- **June –August 2010**: Conduct health assessment survey and collect fecal specimens from wildlife and human study enrollees. Collect fecal specimens and GPS collar livestock (goats and sheep) and domestic dogs. Identify water sources and conduct sampling of watersheds
- **August –July 2011**: Laboratory testing of samples for bacterial and parasitic analyses.

**DRY SEASON FIELD ACTIVITIES**

**Study Enrollment and Sample Collection**
- **Enrollment, health surveys and sample collection**
- **On site training**

**Watershed Sampling**
- **Identify water sources**
- **Water sampling**

**Livestock Collaring and GPS Data Analyses**
- **GPS Collaring**
- **GPS Data Output**

**Next Steps**
- Complete bacterial and parasitic analyses on samples, including culture, molecular approaches; subtyping, virulence testing, and susceptibility testing (bacteria).
- Analyze GPS, landscape and health assessment data
- Complete rainy season field sampling (Nov-Dev 2010)
- Share findings with our local collaborators and the wider public health community.

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