Located in the Amazon rainforest, the Madre de Dios region of Peru has seen a dramatic increase in small-scale gold mining. Miners use mercury to extract gold from river sediment and release mercury into the environment by burning it off and dumping it into the river. People living in communities along the river are exposed to this mercury through environmental factors and consumption of mercury-contaminated foods such as fish. The overarching goal of this project is to study the health effects of mercury contamination in this area.

**PROJECT CONTEXT**

Project 1
- Leishmaniasis accounts for 2,357,000 Disability Adjusted Life Years (DALYs) lost
- Agent: *Leishmania* parasite
- Vector: Phlebotomine sandfly
- In 2012, 804 cases of Leishmaniasis were reported in Madre de Dios

Project 2
- In 2012, 53.1% of children under 6 were anemic in rural Peru
- Specifically in Madre de Dios, 44.7% of children under 5 were anemic in 2010

**PROJECT OBJECTIVES**

Project 1
- This project examines how different environmental variables such as land use and soil chemistry affect the distribution of sandfly species in Madre de Dios

Project 2
- This project is a pilot to look at the potential link between anemia and mitochondrial DNA damage caused by mercury exposure

**METHODOLOGY**

Project 1
- To collect insects, we set out four CDC light traps overnight. The next day we separated out the sandflies and sent them to our research partners at NAMRU-6 for identification.
- We used a small punch tube to collect soil at each trap site. We weighted it, dried it, and reweighted it to measure moisture content.
  - We used a Munsell soil color chart to determine soil color and used a field test to analyze soil texture.

Project 2
- To examine the blood, field workers collected samples from participants and processed them for serum.
- Samples were then frozen in Credo Cubes in the field then transferred to the NAMRU-6 research facility for shipment to the US

Thanks to our partners at NAMRU-6, DIRESA Madre de Dios, Dr. William Pan, Dr. Joel Meyer, Dr. Ernesto Ortiz, Dr. Beth Feingold, Axel Berky, Lauren Wyatt, Priyanka Krishnan, Joshua Latner and Laura Rogers. We would also like to thank Bass Connections for their support.