**Louisa Crawley**

**Mentor:** Mark Schmaedick, Ph.D., American Samoa Community College

Name of Coordinating Center: University of Hawaii John A. Burns School of Medicine

**Comparison of Three Mosquito Traps for Lymphatic Filariasis Molecular Xenomonitoring in American Samoa Villages**

Lymphatic filariasis (LF) is a mosquito-borne disease caused by *Wuchereria bancrofti,* a parasitic round worm endemic in American Samoa. The effort to eliminate LF has been highly successful, and is now in the monitoring phase to ensure continued progress. One of the monitoring methods is molecular xenomonitoring (MX) using PCR to detect parasiticDNA in mosquitoes. Currently, MX uses BG Sentinel traps to collect the LF vector *Aedes polynesiensis (*Polynesian Tiger Mosquito). But the BG Sentinel traps catch relatively few *Ae. polynesiensis*, and most of those have not yet blood fed. Gravid traps target mosquitoes that have blood fed, and have been used to collect large numbers of Southern House mosquito (*Culex quinquefasciatus)* for MX where that species is a vector. Though *Cx. quinquefasciatus* is not an LF vector in American Samoa, parasite DNA can be detected in non-vectors as well as vectors. We hypothesize that gravid traps targeting *Cx. quinquefasciatus* are more efficient for MX than the BG Sentinel traps targeting *Ae. polynesiensis*.

For our study, we compared two alternative gravid traps to the BG Sentinel trap. Two of each trap type were set in two villages and rotated daily in a Latin square design. The daily average catch rate for *Ae. polynesiensis* and *Cx. quinquefasciatus* were compared to assess the relative efficacy of the traps. If one or both gravid traps prove to be effective in capturing large numbers of *Cx. quinquefasciatus*, then they may provide a more efficient alternative to the BG Sentinel for LF MX in American Samoa.

**Key Words: Vector-borne disease, xenomonitoring, gravid traps, *Aedes polynesiensis*, *Culex quinquefasciatus*, lymphatic filariasis**