

### Canine Chagas Disease Prevalence Among Rescues

Chagas disease (CD), which is caused following infection with the protozoan parasite, *Trypanosoma cruzi* has been recently shown to be transmitted locally by the kissing bug vector, *Triatoma sanguisuga* in Alachua County, Florida. A recent serological prevalence study conducted by our team to screen 614 high-risk Latin American populations in Alachua County revealed a startling 3% prevalence for CD, and these presumed CD-positive samples were subsequently confirmed by the U.S. Centers for Disease Control's reference laboratory. Importantly, CD also afflicts canines, regardless of species, leading to similar disease sequelae in humans, including inflammation and fibrosis of the heart that results in arrhythmias, myocardial dysfunction, heart failure, and sudden death. "Rescues" in particular, are at higher-risk of infection due to their unknown length of exposure in the environment prior to their onboarding with various local humane groups. Rescued canines are not tested for CD and therefore not afforded appropriate care. It remains unclear how many rescued and adopted dogs who subsequently suffered from heart disease or who suddenly died, was a direct result of an occult CD infection. We propose to quantify the prevalence of *T. cruzi* exposure and *bona fide* canine CD among rescues (n=204; 90% power; alpha=0.05) in the Alachua-Gilchrist Counties catchment area. The FVSP student will focus on gaining experiencing in phlebotomy, epidemiological study design, and the brass tacks mechanics of implementing rigorous serological assays and rapid tests (FDA approved for human use) to screen canine serum. During the short FVSP training period, the scholar (Sydney Cottingham, MS) will also help expand the screening program through the engagement of new rescue organizations (beyond the four who have agreed to collaborate with us), educating practicing veterinarians and veterinary technicians within these organizations about canine CD, and the enrollment of new subjects. In addition to conducting the serological assays for these samples, Sydney will gain experience developing a CRISPR/Cas diagnostic for detection of *T. cruzi* variants in a whole blood matrix as well as co-jointly develop a risk-assessment survey for canines for exposure around homes, shelters, etc. Sydney has expressed interest in eventually pursuing a PhD after her DVM, and we will take this opportunity to develop a completely new, feasible, trainee-derived, hypothesis-driven project, as a direct offshoot of the FVSP study.