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Kamuela E Yong* (kamuela.yong@hawaii.edu). *Agent-based mathematical modeling as a tool for estimating Trypanosoma cruzi vector–host contact rates.*

The parasite *Trypanosoma cruzi*, spread by triatomine vectors, affects over 100 mammalian species throughout the Americas, including humans, in whom it causes Chagas’ disease. In the U.S., only a few autochthonous cases have been documented in humans, but prevalence is high in sylvatic hosts (primarily raccoons in the southeast and woodrats in Texas). The sylvatic transmission of *T. cruzi* is spread by the vector species *Triatoma sanguisuga* and *Triatoma gerstaeckeri* biting their preferred hosts and thus creating multiple interacting vector–host cycles. The goal of this study is to quantify the rate of contacts between different host and vector species native to Texas using an agent-based model framework. The contact rates, which represent bites, are required to estimate transmission coefficients, which can be applied to models of infection dynamics. In addition to quantitative estimates, results confirm host irritability (in conjunction with host density) and vector starvation thresholds and dispersal as determining factors for vector density as well as host–vector contact rates. (Received September 14, 2016)