**Figures**

**Figure 1**: Annual reported cases of Lyme disease by state from 2006-2017 (Left) and the annual reported cases of Lyme diseases by counties in Pennsylvania from 2006-2017. Public data from the Center of Disease Control.

**Figure 2:** Incidence rates of the five most abundant tick species across Pennsylvania at different time periods from 1960–2018.

**Figure 3:** On the left is the annual sum of tick specimens (log-transformed) from 1900 to 2017. On the right are the proportional contribution of the major tick species to the total tick counts (1900–2017). The grey shaded area represent area where there were no tick submissions.

**Figure 4:** On the left is the total proportion of tick specimens received at different months of the years from 1900 to 2017. On the right are the proportion of the five major tick species received at different months of the years from 1900–2017.

**Figure 5**: The monthly proportion of *D. variabilis*, *I. cookei*, *and I. scapularis* specimens at the larval, nymphal, and adult stages from 1900-2017.

**Figure 6:** Visual representation of the quantitative data on ticks associated with different hosts.

SUPPLEMENTARY FIGURES

**Figure S1**: Total population of Pennsylvania counties in 1960, 1990, 2000, and 2010.

**Figure S2:** Dot-density map of all individual tick specimens across Pennsylvania from 1900–2017. Each point represents an individual specimen with its placement randomized within the county.

**Figure S3** Presence or absence map of the tick genera excluding *Ixodes scapularis, Ixodes cookei, Dermacentor variabilis, Amblyomma americanum, and Rhipicephalus sanguineus.*

**Figure S4:** The monthly proportion of the tick specimens across different decades.

**Figure S5**: The monthly proportion of *D. variabilis* specimens at the larvae, nymphal, and adult stages across 1960 to 2010

**Figure S6**: The monthly proportion of *I.scapularis* specimens at the larvae, nymphal, and adult stages across 1990 to 2017

**Figure S7:** The monthly proportion of *I. cookei* specimens at the larval, nymphal, and adult stages across 1980 to 2017