

# Katherine Griffin

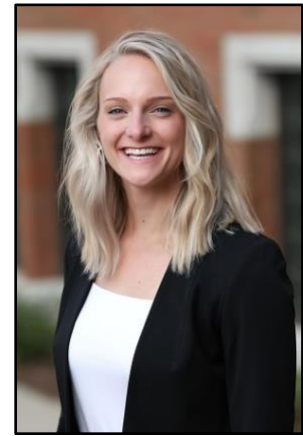
*M.P.H. Candidate, Epidemiology Track*

[katherine.e.griffin@vanderbilt.edu](mailto:katherine.e.griffin@vanderbilt.edu)

**Practicum Site:** Tennessee Department of Health

**Practicum Site Supervisor:** Abelardo Moncayo, Ph.D.

**Tick Mitigation and Surveillance: STEPS Survey in Middle TN and Southeast USA pilot to reduce Lone Star tick populations along trails in wildlife areas**



**Introduction:** The Lone Star tick (*Amblyomma americana*) is the most dominant tick in the Southeast and is a major culprit in spreading vector-borne pathogens to humans and animals. There is a critical need for an environmentally safe and effective control approach that will ultimately reduce tick-human encounters and subsequent risk of pathogen transmission. The Tennessee Department of Health Vector-Borne Disease Program participated in a pilot study that compared a tick-killing prototype against vegetation management in reducing Lone Star tick populations along trails in wildlife areas. This was a collaborative effort during the Summer of 2023 between the Southeastern Center of Excellence in Vector Borne Diseases (SECVBD) and several other public health entities. To aid surveillance efforts, a Southeast Tick-Borne Emergent Pathogen Surveillance (STEPS) survey was also conducted across Middle Tennessee to collect and determine tick-borne pathogen prevalence in four of Davidson's surrounding counties.

**Methods:** The pilot study required two parks, each split into four 100-meter sections: a control, two serving as individual treatment sections, and a final section that includes both treatments combined. Tick collections occurred at the beginning of each week to assess abundance, and two treatments were applied during the middle and end of each week. As for the STEPS survey, the team surveyed four public parks and pooled the samples for future PCR pathogen testing. All ticks were collected via flannel cloth using the dragging or flagging method and stored live at  $-80^{\circ}\text{C}$  for preservation.

**Results:** Results are still pending from the pilot study. As for STEPS surveillance efforts, over 2,160 ticks have been collected across the four counties and will later be analyzed for tick-borne pathogens this Winter.

**Conclusions:** Despite decades of research, controlling tick populations has remained a significant challenge for public health officials across the globe.