

Appendix. Areas of research identified by CDC for PacVec CoE funding.

Proposals for training grants for mentored research should focus on one or more of the following:

Ticks

- Laboratory or field evaluations of emerging technologies to suppress host-seeking ticks or disrupt pathogen transmission cycles (entomological outcome measures).
- Field evaluations of commercially available technologies/products for tick/pathogen management in approaches that include either single or integrated methodologies (minimally with entomological outcome measures, ideally also with human-related outcome measures such as human-tick encounters).
- Laboratory or field evaluations of personal protective measures to prevent human-tick encounters resulting in tick bites.
- Impact of landscaping and vegetation management on residential properties or in high use public areas on the density of host-seeking ticks.
- Field studies aimed at optimizing application of tick control products to provide recommendations for pest control firms and homeowners regarding how to optimize tick suppression depending on type of product used, application method, timing of applications and vegetation structure in the treated area.
- Laboratory or field studies to test novel methods for control of brown dog tick (*Rhipicephalus sanguineus*) populations on dogs.
- Development of vaccines that protect dogs from infection with *Rickettsia rickettsii*.
- Development or early-stage evaluation of novel deer-targeted tick control strategies, including modifications to existing technologies to increase their effectiveness and acceptability.
- Assessments of the potential for incorporating tick management into existing mosquito management programs.
- Investigations on the knowledge, attitudes, and behaviors regarding tick control methodologies.
- Evaluation of the impact of existing public education programs on human behaviors to prevent tick bites.

Fleas

- Evaluation of the prevalence of flea-borne pathogens (*Rickettsia typhi*, *Rickettsia felis*, *Bartonella henselae*) in flea populations from diverse geographic areas.

Mosquitoes

- Field evaluations of emerging technologies to suppress mosquito immatures or adults (entomological outcome measures).
- Field evaluations of mosquito management approaches based on commercially available methods and products (minimally with entomological outcome measures, ideally also with human-related outcome measures).

- Evaluations of the effectiveness of operational control activities targeting mosquito immatures, adults, or multiple life stages (entomological outcome measures).
- Field studies on the impact of insecticide resistance on operational mosquito control activities.
- Evaluation of the impact of existing public education programs on human behaviors to prevent mosquito bites and reduce larval habitat.