



# Modular Insect Trap

**Unmet Need:** Arthropods, such as ticks and mosquitoes, may act as viral reservoirs and are a public health concern. To mitigate the spread of viral human diseases, i.e., malaria, and Lyme disease, it is critical to know the population size of arthropods in an area. Current collection methods include tick dragging, swabbing suspected tick burrows, or attracting ticks to a collection area using attractants. For example, dry ice is used as an attractant by releasing large quantities of CO<sub>2</sub> to attract arthropods to the collection site. However, current methods are limited in their efficiency as they required significant man-hours and collection methods may be ineffective. With the rising average temperatures, we are seeing an increase in mosquito and tick populations, therefore it is vital to have accurate population counts to ensure treatment options are available for pest control.

**Solution:** The US Navy, through the Naval Medical Research Command (NMRC), has designed and developed a trap system that attracts arthropods to a collection area overtime while decreasing the number of man-hours needed for collection. The device utilizes an adhesive surface that catches arthropods and allows them to be collected later. The adhesive surface is positioned to trap the bug on its dorsal side to mitigate self-removal. Moreover, this device may use different attractants based on the intended insects to trap. In a trial to compare with current methods, dragging was the least effective, only collecting up to 10 ticks per drag. In contrast, CO<sub>2</sub> as an attractant for a cloth collection site and the inventive device were far more effective, collecting from 45-425 ticks per site of collection. While similar in collection numbers, the inventive device was superior to the cloth collection using the same attractant because it allows for longer collection time intervals with greater flexibility and convenience of needing less manpower.

**Stage of Development:** The technology is in the prototype stage.

**IP or IP status:** This technology is embodied in US Patent App. No. 16/126,050 ([US 2019-0000062 A1](#))

- **Command:** NMRC
- **Category:** Research Tools, Public Health Tool
- **License Status:** available for exclusive or non-exclusive licensing and collaborations
- **Date Published:** June 30, 2024
- **Date Updated:** N/A
- **Invention No.:** 103304US03
- **Contact:** [usn.detrick.nmrc.mbx.technology-transfer@health.mil](mailto:usn.detrick.nmrc.mbx.technology-transfer@health.mil)

## Branding colors

The following colors are approved for additional use for charts, shapes, standout text etc.

- Red - 196/18/48
- Yellow - 232/176/16
- Blue - 2/42/58
- Turquoise - 0/118/169
- Gold - 140/123/33
- Moss - 68/82/35
- Peat - 0/40/30



Photo captions and credit text should be arial narrow and centered.

These colors are in RGB mode, which is PowerPoint's color model.

When creating shapes, flowcharts, and colored text, prioritize the blue red, and yellow above, as these are NMRC's primary colors. Avoid using yellow for text on white backgrounds.