Request of Zika Emergency Response Funding

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Gainesville is the largest city in the region of North Central Florida and the home of the University of Florida as well as the Santa Fe College. The University of Florida is ranked as the nation's ninth largest university with 51,725 enrollment, plus a total of 15,887 students at the Santa Fe College, making Gainesville home to a significant transient population and one that frequently travels to arbovirus endemic areas abroad. Thus, Gainesville is at great risk of introduction and outbreak of dengue, chikungunya and Zika viruses.

The Gainesville Mosquito Control program (GMC) is a city funded mosquito control program that provides mosquito control services for the citizens of Gainesville. Even though GMC is not a State-approved mosquito control program, it carries the same duties as other mosquito control programs: To protect Floridians health and safety and foster the quality of life from pestiferous and disease-carrying mosquitoes without the State funding. GMC uses Integrated Mosquito Management (IMM) approach - a combination of breeding site reduction, biological, chemical and physical control methods and citizen education to maintain targeted species of mosquitoes at acceptable levels. GMC performs regularly scheduled inspections (with treatment if warranted) in over 450 identified mosquito breeding sites, monitors mosquito populations by using CDC light traps to gauge daily mosquito control operations, provides mosquito fish to meet the needs of citizens, and conducts larval control by applying larvicides. GMC also uses ground-level, ultra-low volume (ULV) fogging when large numbers of adult mosquitoes are present in our area, and when source reduction or biological control or larviciding is inadequate. All of GMC employees are licensed with Public Health Pest Control (PHPC) licenses.

Alachua County has had four confirmed travel-related cases of Zika infection and more than 31 suspected cases so far. With more than 50% of the county population living within the city of Gainesville, GMC plays a key role in terms of fighting for the Zika infections in Alachua County. So far GMC has, at the request and in coordination with the Department of Health (DOH)-Alachua, investigated and responded to a number of suspected and confirmed cases of Zika infection with limited resources. Furthermore, as mosquito season is under the way, mosquito control staff will be more focused on routine mosquito control operations such as responding to citizen's service requests and conducting larvicide and adulticide missions. GMC

is in urgent need for extra funding to hire additional personnel to ensure adequate response during the upcoming mosquito season.

GMC's CDC light trap collection indicates that *Aedes albopictus* is the only container mosquito species in Gainesville. However, the re-emerging of *Aedes aegypti* in St. Johns and Duval Counties is a wakeup call for us. GMC is planning to enhance our surveillance program by adding BG sentinel traps into our routine trapping system so that the detailed distribution of *Ae. albopictus* and *Ae. aegypti* in the County level can be determined. *Aedes albopictus* hot spots will be identified. Currently GMC has 4 BG traps being used for Zika case response. We want to employ additional BG traps into our 16 trapping zones. GMC is also planning to expand our ovitrap program from current 2 locations to 16 locations/zones (GMC started monitoring *Ae. albopictus* population by using ovitraps last year, we successfully detected the seasonality of oviposition and egg hatching rate of *Ae. albopictus* in Gainesville). The results were reported at "The 13th Anastacia Mosquito Control District's (AMCD) Workshop" (Please the attached AMCD2016 PowerPoint presentation).

Last year, GMC conducted a field study to evaluate the efficacy of ULV truck spray against caged *Ae. aegypti*. Results indicated that ground ULV spray had poor control of this species; the average mortality ranged from 2 to 45% 24-hour post treatment (Please see the attached AMCA.Jiang presentation). However, in a separate study, an excellent control was yielded by using backpack sprayer to treat the natural population of adult *Ae. albopictus*. Also, the number of eggs was reduced significantly (Please see the attached Duet presentation at the Florida Mosquito Control Association (FMCA)). GMC decided to incorporate this control strategy into our Zika emergency response plan and to expand this study by testing different adulticides and backpacks. Because backpack control lasts only for 1-3 days, GMC wants to incorporate larval control strategy by adding thermal fogger application to achieve a long term control of *Ae. albopictus*; as reported by Dr. James Cilek, Navy Entomology Center of Excellence.

Detailed budget for the emergency response for Zika:

Personnel: Two full time equivalent temporary positions. These positions will be responsible for the BG and ovitraps setup, retrieving, data collection. The two also are in charge of field larval collection as well as bring the eggs and larvae back to the lab to rear to adult for ID. The two are required to conduct public education and outreach regularly, door to door inspection and clean up in the case of Zika cases.

Equipment:

IGEBA TF-34 Thermal fogger: Larvicide application

10 BG traps, batteries and chargers: *Aedes albopictus* and *Ae. aegypti* surveillance

Eaton Brother green fluted plastic vases: ovitraps

Germination paper: Used to collect *Aedes* egg in the field

HOBO water proof shuttle thermometers: Will be used to record field weather data

Curtis Dyna-Fog Twister XL3: Backpack sprayer for adulticide application

IPad: will be used for field data collection

Chemicals:

Vectobac WDG: Larvicide for thermal fogger application

Naturlar DT: Larvicide for small container control

Duet: Adulticide

Miscellaneous:

Lab supplies, computer supplies, bottles, BG lures, dry ice