

Top Story: Arbovirus: Arbovirus Surveillance Program partners with Texans

In Texas, the most dangerous animals in the world are once again buzzing around, invading personal space, and seeking blood meals. May through November is mosquito testing season in the Arthropod-borne Virus (Arbovirus)-Entomology Laboratory, at the Texas Department of State Health Services (DSHS). Summer is a time when the professional virus hunters are also buzzing around the laboratory identifying mosquito species under the microscope and testing them for viruses that cause diseases in humans. These diagnostic tests allow the Arbovirus Surveillance Program to keep millions of Texans safe from mosquito-borne diseases.

The success of the program depends heavily on partners at the local level that submit mosquitoes. Every year, approximately 50-60 different entities participate in the DSHS Arbovirus Surveillance Program. Participants that submit mosquitoes for testing represent city and county health departments, health service regions, military installations, universities, and local mosquito control districts.

The program actively engages with submitters to address their needs. There is always an open invitation for existing and future program participants to visit the laboratory facility and see where the mosquito testing takes place. Dr. Bethany Bolling, a microbiologist in the Arbovirus-Entomology Laboratory, provides informational tours, explaining the process from mosquito receipt to virus testing. She also travels to local and regional conferences and gives presentations about the Arbovirus Surveillance Program laboratory services, workflow processes, and the importance of submitting high quality specimens.

When interacting with submitters, Dr. Bolling frequently responds to questions about virus transmission, laboratory testing, and best practices for mosquito surveillance, collection and shipment.

In coordination with Texas A&M AgriLife Extension, Dr. Bolling, along with the State Medical Entomologist, Dr. Whitney Qualls, helps teach workshops on mosquito identification, biology, ecology, surveillance, and virus testing. Dr. Bolling and Dr. Qualls also help teach the more intense three-day training workshops funded through the Western Gulf Center of Excellence for Vector Borne Diseases, that provide training on the ecology and epidemiology of vector-borne diseases, insecticide resistance monitoring, and outbreak response management. These workshops are attended by DSHS mosquito submitters and other public health professionals involved in controlling mosquito-borne diseases. Anticipating the needs of mosquito control professionals in Texas, the Arbovirus-Entomology Laboratory will be providing a new test, the CDC Bottle Bioassay for evaluating insecticide resistance in mosquitoes. Mosquito crusaders have been

relying on insecticides to kill mosquitoes since the mid-20th century. Decades of controlling mosquitoes has led to the development of resistance to these insecticides in some mosquito species

Insecticide resistance can limit the effectiveness of vector control efforts. Early detection of resistance is critical for effective management practices to be implemented. The CDC Bottle Bioassay test will inform mosquito control professionals about the extent of resistance in their area.

Dr. Qualls has led the efforts to educate mosquito control programs in Texas about how the bottle bioassay works. Mosquito eggs will be submitted to the Arbovirus-Entomology Laboratory so that emerging adult mosquitoes can be tested for resistance. Initially, testing for insecticide resistance will focus on the container breeding mosquitoes: *Aedes aegypti* and *Aedes albopictus*, which are the primary vectors of Zika, chikungunya, and dengue viruses. The resulting information will help mosquito control programs mitigate the effects of insecticide resistance, guide the selection process for vector control products, and help decision makers develop annual budgets.

With the many outreach activities and testing services provided, the Arbovirus Surveillance Program is dedicated to fostering partnerships that reduce mosquito-borne disease transmission in Texas.

September is National Newborn Screening Awareness Month

Thank you for ensuring Texas babies are screened!

- Newborn screening is recognized as the largest and most successful public health disease prevention program in the US.
- Through the [Texas Newborn Screening Panel](#), more than 800 babies are diagnosed with one of the 54 screened conditions each year.
- On August 5, 2019, X-linked Adrenoleukodystrophy (X-ALD), was the 54th disorder added to the [Texas Newborn Screening Panel](#).
- To learn more about newborn screening, visit [Texas DSHS Newborn Screening Laboratory](#) and [BabysFirstTest.org](#).

Mark your calendar, [BabysFirstTest.org](#) will host a Twitter Chat (#2019NBS) on **September 17th at 1pm CST!**

Interested in a topic? Let us know! Please write to us at Laboratorian@dshs.texas.gov to submit your questions.