Objectives

- Describe the Alabama Department of Public Health (ADPH) organization
- Describe Infectious Diseases & Outbreaks Division (ID&O)
- Current Disease Numbers
- Human Surveillance and Vector Control Activities
- Describe plans and activities current and future
Heart of Dixie

Population 4.8 Million
Mosquito Control Efforts in Alabama

Madison and Mobile County Health Departments conduct their own MC.

Montgomery and Baldwin County Commissions fund their own programs for unincorporated areas of their respective counties.

~25 other municipalities conduct mosquito control activities.
### Human Cases of Mosquito-borne Disease

<table>
<thead>
<tr>
<th>Disease</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chikungunya</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dengue</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Eastern Equine Encephalitis</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Malaria</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>St. Louis Encephalitis</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>West Nile</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Zika</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13 cases</strong></td>
<td><strong>43 cases</strong></td>
</tr>
</tbody>
</table>
Current ADPH Vector Resources

- Trained Staff
  - Entomologist
  - Epidemiologist
  - Environmentalists
  - Disease Intervention Specialists
  - Nurses
- Collaborations with Auburn University and University of South Alabama
- Partnership with CoE Vectorborne

- Mosquito control equipment/supplies
- Mosquito surveillance equipment/supplies
- Health Promotion Materials
- GIS
- Vector-borne Disease Emergency Response Teams

Made possible through CDC ELC and PHEP Funding
Mosquito Surveillance in Alabama

For ID&O:
- Conduct mosquito and mosquito-borne disease surveillance throughout Alabama
- Conduct insecticide resistance testing in major metropolitan areas of the state

Main Focus in our Auburn University collaboration with Dr. Sarah Zohdy:
- Map the presence of *Aedes albopictus* and *Aedes aegypti* in the state
Mosquito Surveillance in Alabama

This was our first year with an internship provided by the CDC Southeastern Center of Excellence in Vector Borne Diseases

Our 2019 summer intern, Sarah, helped to cover trapping in the Birmingham and surrounding areas.
Courtesy Yard Inspections

- All positive Zika patients
- Addresses in the 150 yard radius
- Environmentalists
  - Dippers, repellents, larvicides
  - Residential check lists, and door hangers.
- Information on home mosquito control provided to the residents.
Monitoring/Trapping Mosquitoes

BG Sentinel Trap with Octanol

Gravid traps

CDC Miniature Light traps with CO2
Mosquito Surveillance

InsectaZooka by Bioquip

CDC-Designed Prokopack used by Auburn Zohdy Lab team
Aedes albopictus

Results: 67/67 counties

Aedes aegypti

Collected in Mobile, Alabama in 2017

Aedes japonicus

Results: 34/67 counties

Photo: James Gathany / CDC.
Mosquito Species Collected in Alabama 2016-2019

<table>
<thead>
<tr>
<th>Aedes albopictus</th>
<th>Culex quinquefasciatus</th>
<th>Psorophora ciliata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aedes aegypti</td>
<td>Culex salinarius</td>
<td>Psorophora ferox</td>
</tr>
<tr>
<td>Aedes japonicas</td>
<td>Culex tarsalis</td>
<td>Psorophora columbiae</td>
</tr>
<tr>
<td>Aedes triseriatus</td>
<td>Culex nigripalpus</td>
<td>Psorophora horrida</td>
</tr>
<tr>
<td>Aedes vexans</td>
<td>Culex erraticus</td>
<td>Coquillettidia perturbans</td>
</tr>
<tr>
<td>Aedes taeniorhynchus</td>
<td>Culex coronator</td>
<td>Orthopodomyia signiferans</td>
</tr>
<tr>
<td>Aedes sollicitans</td>
<td>Culex restuans</td>
<td>Uraneotania sappharini</td>
</tr>
<tr>
<td>Aedes atlanticus/tormenter</td>
<td>Culex peccator</td>
<td>Mansonia dyari</td>
</tr>
<tr>
<td>Aedes canadensis</td>
<td></td>
<td>Toxorhynchitis rutilans</td>
</tr>
<tr>
<td>Aedes cinereus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aedes fulvus pallens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aedes sticticus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aedes trivittatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aedes thibaulti</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Culex territans</td>
<td></td>
</tr>
</tbody>
</table>
**Aedes Egg Collections**

- Ovicups/Ovitraps were set in six public health districts in various habitats.
- Egg papers were collected and replaced weekly.
- Egg papers are sent to ADPH and eggs counted.
On the Horizon

- Finishing touches on our walk-in insectary
- Launching our Insecticide Resistance Program
- Completing an updated state-wide capacity survey to better meet the needs of the mosquito control entities in Alabama
- Tick surveillance beginning Winter of 2019
Conclusions & Future Plans

- Continue mosquito surveillance
  - ADPH Entomologist will conduct trapping and identification
  - Environmentalists will conduct Courtesy Yard Inspections
  - ADPH, Auburn University, and University of South Alabama will continue collaborative surveillance
  - More testing of mosquito pools for viruses – RAMP and USA projects