

Regional Centers of Excellence in Vector-Borne Diseases

BUILDING OUR NATION'S CAPACITY TO RESPOND



The five Regional Centers of Excellence in Vector-Borne Diseases were established in 2017 to strengthen our nation's ability to prevent and rapidly respond to current and emerging vector-borne disease threats. We combine innovative applied research programs with public health expertise and practice to support the vector-borne disease workforce through workshops, resources, and networks.

We serve a catchment area of over 330 million people across 41 state and territorial jurisdictions of the United States in high-risk areas for vector-borne disease.

APPLIED RESEARCH

Conduct applied research to develop and validate innovative and effective vector-borne disease prediction, prevention, and control tools and methods.

- Improve mosquito & tick surveillance
- Address gaps in knowledge of vector biology & disease transmission
- Investigate and identify effective prevention and control methods
- Disseminate findings directly to the public health community

RESPONSIVE TRAINING

Train vector biologists, entomologists, and medical providers in the knowledge and skills required to address vector-borne disease concerns.

- Training grants for working professionals
- Innovative academic programs for the next generation of public health entomologists
- Hands-on and web-based workshops to reach broad audiences in the vector surveillance & control community

COMMUNITY OF PRACTICE

Strengthen and expand collaboration between academic communities and public health organizations for surveillance, prevention, and response.

- Targeted working groups with diverse membership from academic and public sectors
- Guidance to state and local agencies on effective approaches for vector surveillance & control
- Enhanced networks for communication, data sharing, and integration of research and public health practice

OUR COMBINED EFFORTS

- **National survey of tick surveillance programs**, addressing a gap in our knowledge of baseline program operations in tick surveillance and control in the US, and barriers to program success
- **Aedes Challenge**, an invasive mosquito forecasting challenge across the 5 CoE regions, engaging modelers with public health and vector control decision-makers
- **Smartphone Apps allowing people living in high-risk areas for ticks and tick-borne diseases** to receive educational materials, participate in tick exposure research, and access information for tick control & tools to protect themselves from tick bites



REGIONAL PROGRAM HIGHLIGHTS



Midwest Center of Excellence
VECTOR-BORNE DISEASE

- **Research Fellowship Program supporting 42 undergraduate and graduate students** on research projects with academic and public health partners in the region
- Implementing studies to **measure impact of mosquito larval control** on adult populations and disease prevalence, and **testing the impact of Ultra-Low-Volume spray treatments** on adult mosquito populations in the Chicago area
- CoE academic and public health partners engage in rapid communication and collaboration in **joint efforts to sample mosquitoes in areas with Jamestown Canyon Virus** cases



- **Rapid response to the invasive Asian longhorned tick**, providing open-access resources and initiating applied research projects to understand this tick's impact on human health
- **Over \$1 million in funding for academic trainees**, supporting an innovative graduate training program in vector biology and public health in the Northeast
- **23 applied research initiatives**, measuring the impact of vector control efforts on human disease risk and identifying training gaps and needs for our nation's vector-borne disease workforce



PACIFIC SOUTHWEST CENTER OF EXCELLENCE IN VECTOR-BORNE DISEASES

- CalSurv Gateway – a scalable system for **rapid data reporting that services 117 US vector control and public health agencies**
- Annual open call for training grants, **providing over \$3.2 million in funding dedicated to students** in the Pacific Southwest
- **27 research and development projects at 10 universities** examining new and existing ways to detect, characterize, and control threats from mosquito- and tick-borne diseases



CDC Southeastern Center of Excellence in Vector Borne Diseases
The Gateway Program

- **Effective collaboration between academic and local governmental institutions** through close working ties with 12 departments of health, vector control districts, and six academic institutes, enabling studies of new, cutting-edge vector control approaches
- **Trained over 300 individuals through 3-month internships & existing and newly established workshops across the Southeast and Caribbean**, addressing identified gaps from vector biology to leadership development
- Online Mosquito Training Program bringing **the commercial pest management workforce into public health entomology**



Western Gulf Center of Excellence for Vector-Borne Diseases

- Diverse projects evaluating interventions using **traditional and innovative vector control techniques to reduce yellow fever mosquito abundance in South Texas**
- Newly developed **online courses in fundamentals of public health entomology**, with inter-institutional **graduate student exchange experiences** among partnering universities
- **Trained 2,309 individuals from vector control, animal control, and public health fields** through 1-day workshops and 3-day Master of Vector Borne Disease Management Certification workshops throughout Texas, Louisiana, and Mississippi