

NEVBD DIGEST NEWSLETTER

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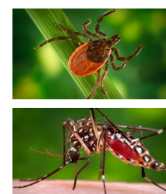
Visit the new CDC Center of Excellence website!

The Centers of Excellence in Vector-Borne Diseases (VBD)

In 2017, five universities were established as regional centers of excellence (COE) to help prevent and rapidly respond to emerging VBDs across the United States. CDC's Division of Vector-Borne Diseases (DVBD) awarded a total of about \$50 million, through December 2021, to these universities.

The COEs combine innovative, applied research programs with public health expertise to help prevent and control VBD threats. Major accomplishments of the COEs include:

- Trained over 5,300 vector control professionals and students through over 80 training opportunities
- Developed undergraduate and graduate degree programs or certificates in public health entomology at all five universities
- Spearheaded creation of regional vector surveillance systems for centralized data tracking
- Evaluated effectiveness of innovative mosquito and tick control methods
- Provided resources and technical assistance to local organizations



Like CDC's Centers of Excellence in Vector-Borne Diseases on Facebook

<https://www.cdc.gov/ncezid/dvbd/coevbd>

CONTENTS

- 2** **2021 SPRING ACTIVITY RECAP**
Partnerships with Regional Vector Control Associations
Virtual Training Programs & Webinar Series
Engaging with Policy & Decision-Makers
Adapting Vector Biology Boot Camp to Virtual Setting
- 5** **2021 PRIORITY WORKING AREAS**
From the NEVBD Network Annual Meeting
- 6** **PESTICIDE RESISTANCE MONITORING NETWORK**
Program Updates
- 7** **TRAINING & PROFESSIONAL DEVELOPMENT**
- 8** **VECTOR VILLIAN BIOSKETCH**
*Woodland snowpool mosquito, *Aedes communis**



2021 Spring Activity Recap

Partnerships with Regional Vector Control Associations

NEVBD was delighted to assist several regional vector control associations in early 2021 in hosting virtual conferences for their memberships. Our collaborators included the [Northeastern Mosquito Control Association](#), [Mid-Atlantic Mosquito Control Association](#), and [New Jersey Mosquito Control Association](#).



You can visit each of their websites to access meeting materials where available.

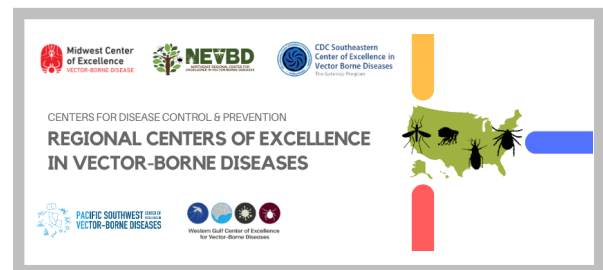
Virtual Training Programs and Webinar Series

NEVBD hosted and participated in several virtual seminars and training programs in spring 2021. We provide a brief snapshot of these series below.



Centers of Excellence in Vector-Borne Diseases Seminar Series

NEVBD partnered with our fellow Centers of Excellence in Vector-Borne Diseases and partners at the CDC Division of Vector-Borne Diseases to host a five-part seminar series from January to May, 2021.



These seminars featured trainees from each our programs who provided updates on their ongoing applied research projects.

CoE Seminar Series Presentation Schedule

- January 28 - New Bugs on the Block: Updates on Invasive Species Research
- February 25 - Mosquito Wrangling: Finding Effective Control Methods
- March 25 - Building the Vector-Borne Disease Workforce
- April 29 - Tomorrow's Vector Forecast: Predicting Vector-Borne Disease Activity
- May 27 - A Bug's Life: Vector Behavior and Trends

These seminars were not recorded, as several of the presentations covered works-in-progress. Stay tuned across the coming year for publications of the results!



Strategic Public Health Communication for Vector-Borne Disease Prevention

NEVBD hosted a four-part seminar series from March to May, 2021, covering best practices for effective public health communication. The course was led by [Dr. Amelia Greiner Safi](#) of the Cornell Master of Public Health Program & Department of Communication. Guest speakers also included Dr. Jody Gangloff-Kaufmann of the [New York State Integrated Pest Management Program](#) and Dr. Dina Fonseca of the Rutgers University [Center for Vector Biology](#).

You can access recordings from each of the four lectures in this seminar series by visiting our Cornell Video on Demand Channel.



Engaging with Policy Decision-Makers

NEVBD collaborated with colleagues at the [Vector-Borne Disease Network](#) to support outreach to elected officials at the federal level regarding the [Kay Hagan TICK Act](#) and [SMASH Act](#). The Vector-Borne Disease Network supported a coalition letter to the Labor, Health and Human Services, Education, and Related Agencies Appropriations Subcommittee to seek full funding of these two pieces of legislation in FY2022, as well as Dear Colleague Letters in both the House and Senate to support funding to the CDC Division of Vector-Borne Diseases.



Kay Hagan TICK Act

- Enacted December 2019 under the Further Consolidated Appropriations Act
- Requires the Department of Health and Human Services to develop a National Strategy
- Reauthorizes the Regional Centers of Excellence in Vector-Borne Diseases for five years at \$10 million per year
- Authorizes CDC Epidemiology & Laboratory Capacity (ELC) grants at \$20 million per year to support state health departments



Strengthening Mosquito Abatement for Safety and Health (SMASH) Act

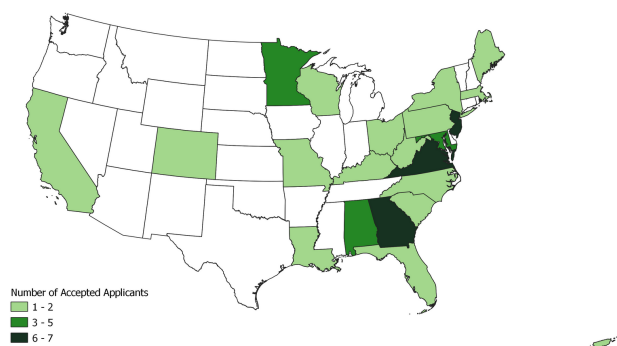
- Enacted June 2019 under the Pandemic and All-Hazards Preparedness and Advancing Innovation Act
- Reauthorizes the Mosquito Abatement for Safety and Health program for FY2020 - FY2024 at \$100 million per year
- Reauthorizes the CDC ELC grant program at a total of \$190 million per year

Adapting the Vector Biology Boot Camp to the Virtual Environment for 2021

Due to the ongoing COVID-19 restrictions in place across the US, NEVBD adapted our in-person [Vector Biology Boot Camp](#) program to a virtual environment for 2021. We hosted a 9-part virtual lecture series across a two week period in mid-May, covering much of the material typically covered in our in-person program.

One positive outcome of this change is that we were able to expand program access to a broader audience. NEVBD received over 90 applications to participate in the event, including an international audience. Due to limitations on our program capacity, we restricted participation in the live events to individuals working in public agencies in the US. We engaged with 57 program attendees from 22 states.

Jurisdictions of the 2021 Vector Biology Boot Camp Virtual Lecture Series Accepted Applicants



NEVBD also made materials from this year's program available to our applicants who were not able to join for the live events for a limited period directly following the close of the program. Our goal is to eventually bring back the in-person training components of the Vector Biology Boot Camp. Pending COVID-19 conditions, we are planning a limited hands-on training component for our 2020 and 2021 virtual program participants in the Northeast region this upcoming October.

NEVBD thanks all of our instructors and participants for engaging in this adapted program!

NATIONAL MOSQUITO CONTROL AWARENESS WEEK

Each year, the week of June 21 is declared National Mosquito Control Awareness Week by the American Mosquito Control Association. AMCA's "Mosquito Week" educates the general public about the significance of mosquitoes in their daily lives and the important service provided by mosquito control workers throughout the United States and worldwide.

JUNE 20-26, 2021 #NATIONALMOSQUITOWEEK



2021 Priority Working Areas from the NEVBD Network Annual Meeting

NEVBD hosted the 2021 Annual Meeting virtually through the Zoom Webinar and VirtualPosterSession.org platforms to accommodate restrictions in response to the SARS-CoV-2 pandemic. A full-day webinar was hosted Tuesday 12 January 2021, open to attendance by all interested parties across the United States and neighboring territories. Recordings of presentations and poster archives from the 2021 Virtual Annual Meeting are available on the [NEVBD website](#), where presenter permissions have allowed.

The Annual Strategic Planning Session was also hosted virtually in 2021 using the Zoom Meeting platform. A half-day meeting was hosted Tuesday 19 January 2021 and attended by key stakeholders and collaborators in the NEVBD network. We have briefly summarized some of the 2021 working priorities identified by our network here. You can access the [full annual meeting report](#) in the NEVBD eCommons archive hosted through Cornell University. We have briefly outlined some of our priority targets below.

Vector Surveillance, Biology, and Control Applied Research



- Enhance predictive models for tick and mosquito abundance and range expansion.
- Support the expansion of tick and mosquito surveillance capacity in the region. Applied research programs will focus on emerging vectors of importance, including *Amblyomma americanum*, *Amblyomma maculatum*, and *Haemaphysalis longicornis*, and mosquito arbovirus bridge vectors.
- Continue to support the expansion of pesticide resistance monitoring in the Northeast

Support professional development in the vector-borne disease community through virtual programming & support continued engagement of academic trainees with the public health and vector control community



Support Communication with Public Health & Vector Control Stakeholders



- Continue to support communication between regional public health and vector control programs during the active vector surveillance season.
- Continue to provide opportunities for public health and vector control stakeholders to engage with our research teams through regularly-scheduled seminar series and virtual conferences.
- Continue to engage with national and regional associations to align advocacy efforts and promote effective communication with legislative stakeholders.

Pesticide Resistance Monitoring Network Updates

We are excited to introduce two of our newest members to the NEVBD Pesticide Resistance Monitoring Program!

Lindsay Baxter, MS

Lindsay Baxter is the new Research Support Specialist for the NEVBD Pesticide Resistance Monitoring Network. In her current role, she is focused on conducting research pertaining to pesticide resistance in ticks and mosquitoes in the Northeast region and directs the Pesticide Resistance Monitoring Network activities and objectives. Lindsay completed her Master of Science in Entomology with a concentration in medical entomology and public health from Cornell University in May of 2021. Lindsay's master thesis focused on the ecology of Powassan virus foci in Maine.



Elisabeth 'Lisa' Martin

Lisa Martin has been a technician with the [Harrington lab](#) at Cornell University since 2019, and joined the NEVBD Pesticide Resistance Monitoring Network this past spring. Lisa provides support for day-to-day lab operations and ongoing research projects related to pesticide resistance in ticks and mosquitoes. Lisa graduated from SUNY Binghamton with a Bachelor of Science in Biochemistry in 2015 and is interested in evidence-based solutions for public health problems.



Additional Program Updates for the 2021 Season

- The Kit Ordering System is Open - kits and guidelines have been posted on the NEVBD website. Organizations interested in ordering kits are encouraged to use our [kit request form](#). Please submit your requests early so we can fill them in a timely fashion. Submission kits for *Culex pipiens* and *Aedes albopictus* will allow you to collect and submit specimens directly to Cornell University for bioassay testing. Larvicide efficacy testing kits will help you test the efficacy of your formulated and deployed products in-house.
- Rearing guidelines for [Culex pipiens](#) and [Aedes albopictus](#) specimens are available to help keep mosquitoes alive for use in bioassays
- Our submission system will open on June 14, 2021. Diagnostics will be available for resistance to *Bti*, *L. shpaericus*, and methoprene. We are also able to test resistance to a wide variety of adulticides listed in our [specimen submission form](#).

Training & Professional Development

Vector-Borne Disease Surveillance Course

Hosted by the Cornell Department of Entomology and eCornell, this 3-week online course will cover the tools, methodology, and best practices for the surveillance of arthropod vectors, including ticks and mosquitoes. You will gain the knowledge and resources necessary to design an effective vector surveillance program in your local jurisdiction.

Program cost: \$399 - discounts available.



**Next course begins on
July 7, 2021.**

**Enroll by July 1 to
participate.**

Online Tick Training Course

Introduction to ticks, tick-borne disease, and tick control for employees in the urban pest management industry, public health entomologists, and anyone interested in learning more about ticks. Students will learn about tick biology, identification, surveillance methods, tick management, common tick-borne diseases, safety and prevention, and how all of these modules connect to overall public health.

Program cost: Free



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



Register online

Global Vector Hub: Directory of Medical Entomology Courses

TDR and the Global Vector Hub (GVH) have developed a web-based global directory of medical entomology courses as a new resource for strengthening the capacity of scientists combating neglected tropical diseases and other vector-borne diseases. 126 courses offered in 32 countries across all WHO regions, covering 7 languages.



**Register through
Global Vector Hub to
access the directory.**

VECTOR VILLIAN BIOSKETCH

Woodland Snowpool Mosquito (*Aedes communis*)

The woodland snowpool mosquito is a medium-sized, dark mosquito with pale scales and black legs. It is common to heavily wooded areas of high elevation in the temperate climates of the northern United States and Canada. *Ae. communis* can often be found in the Adirondack Mountains of New York State and Pocono Mountains of Pennsylvania.^{1,2}

What disease agents can *Ae. communis* transmit?

The woodland snowpool mosquito is primarily considered a pest species, but it has been associated with Jamestown Canyon virus.²

Ecology and Behavior^{2,3}

Woodland snowpool mosquitoes are present in spring and early summer and are one of the earliest mosquitoes to appear in the Northeast. *Ae. communis* eggs hatch in melting snowpools in forested areas. These pools are often deep and full of dark water with high tannin content from leaf litter. Larvae of these mosquitoes can also be found in roadside ditches and natural depressions in the ground. Only one generation of this mosquito develops per year.

Woodland snowpool mosquitoes do not fly far from their breeding grounds in forested areas. They prefer to feed on large mammals, readily bite humans, and are considered a serious biting pest. *Ae. communis* bite most frequently after sundown but will also bite during the day in shaded areas.

Surveillance and Prevention

Ae. communis larvae are collected from snowpools using a long-handled dipper and adults can be captured with carbon dioxide-baited CDC light traps. On bright, sunny days, *Ae. communis* larvae will come together near the surface of the water. Otherwise, professionals must often wear chest waders to carefully collect larvae from deep within the pools.^{2,4}

You can avoid bites from woodland snowpool mosquitoes by limiting outdoor activity when these mosquitoes are most active or by applying an EPA-registered insect repellent. When camping in the woods, make sure all tent flaps and window openings are closed or covered with a screen.



Aedes communis adult female
(Photo credit [B. Higman](#))



Woodland snowpool habitat (Photo credit [Diana Carle](#))

[1] Andreadis TG, Thomas MC, Shepard JJ. (2005) Identification Guide to the Mosquitoes of Connecticut. Connecticut Agricultural Experiment Station. [Bulletin No. 966](#).

[2] Crans WJ. (2016) *Aedes communis* (DeGeer). Rutgers University Center for Vector Biology. <http://vectorbio.rutgers.edu/outreach/species/comm.htm>

[3] Crans SC. (1998) The Univoltine Aedes Life Cycle Type: *Aedes communis* (DeGeer). *NMCA Mosquito Life Cycle Symposium*. <http://www.nmca.org/PAPER16.htm>

[4] Carle D. Snow Pool Mosquito Habitat. Accessed June 2021. <https://doctordianacarle.com/snow-pool-mosquito-habitat/>