



Skeeter Stuff

Karen Akaratovic

Suffolk Mosquito Control

Too many emails?



Have you tried reading *The Skeeter*?

THE SKEETER

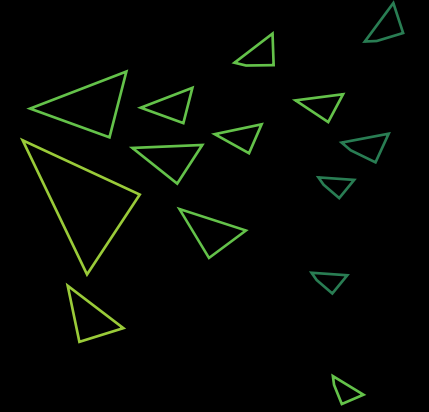
VOL. 83, No. 4

**2023-2024
Winter
Newsletter**

What is it?

Official organizational newsletter
Published quarterly

Tons of Information



- Recent and upcoming events
- Trainings
- Recertification
- Conference information
- Committee announcements

AND SO MUCH MORE...

All those conference photos you didn't know you missed



2006 Annual Meeting

The 2006 Annual Meeting was a great success. There were 150 registered for the meeting (including speakers). Membership totals are 13 sustaining members, 103 regular members, and 78 associate members.

(Meeting Presentations) Most presentations are available for distribution, contact Jason Williams at 757-637-3932 if interested.

Digital Images provided by Beverly Holmberg and Tom Gallagher.



2007 Annual Meeting Summary

The 2007 Annual Meeting was a great success. There were 142 registered for the meeting (including speakers). Membership totals are:

- 16 sustaining members
- 79 regular members
- 70 associate members
- 13 organizational members
- 6 student members

(Meeting Presentations) Most presentations are available for distribution, contact Jason Williams at 757-637-3932 if interested.

Digital Images provided by Carl Sivertsen, Fairfax Co.; Tom Gallagher, York Co.; and Beverly Holmberg, Middlesex Co.



2008 Meeting Wrap Up

The 2007 Annual Meeting was a great success. There were 144 registered for the meeting (including speakers). Membership totals are:

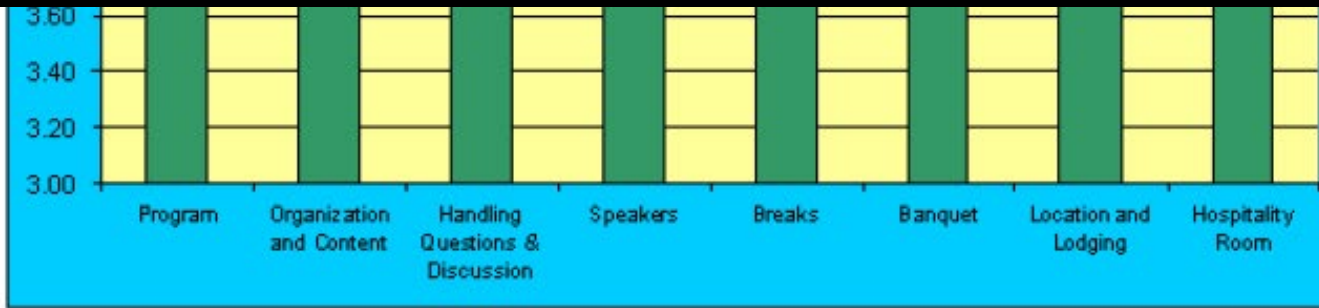
- 13 sustaining members
- 92 regular members
- 82 associate members
- 16 organizational members
- 2 student members

(Meeting Presentations) Most presentations are available for distribution, contact Jason Williams at 757-637-3932 if interested.

Digital Images provided by Carl Sivertsen, Fairfax Co.; Mike Harrison, City of Portsmouth; and Beverly Holmberg, Middlesex Co.



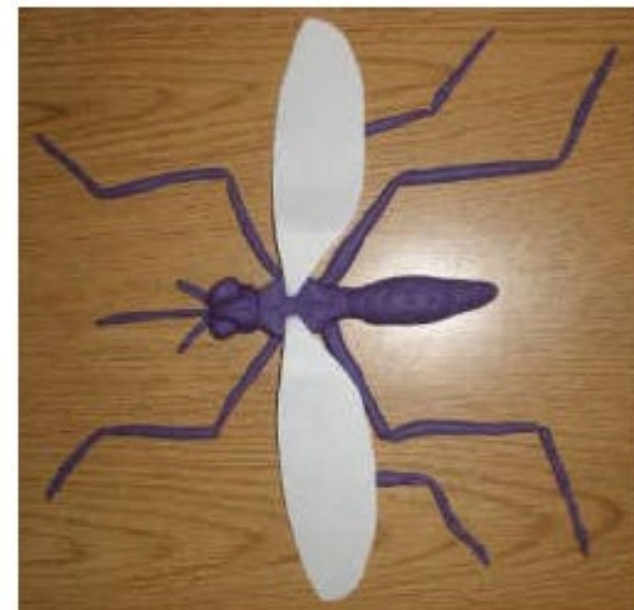
2009 Annual Meeting



Proof that you went to class

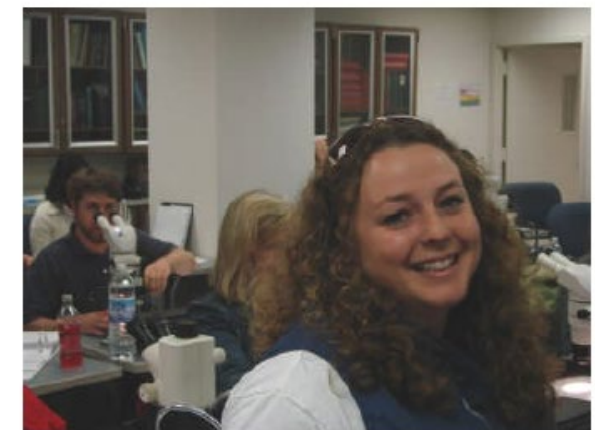
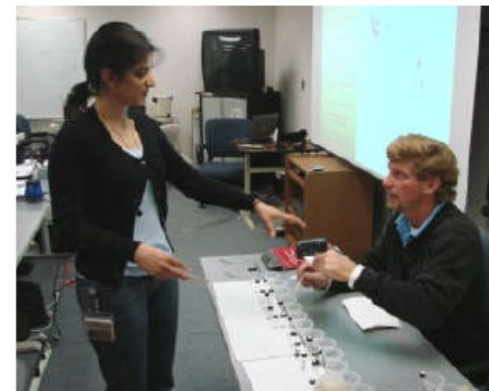
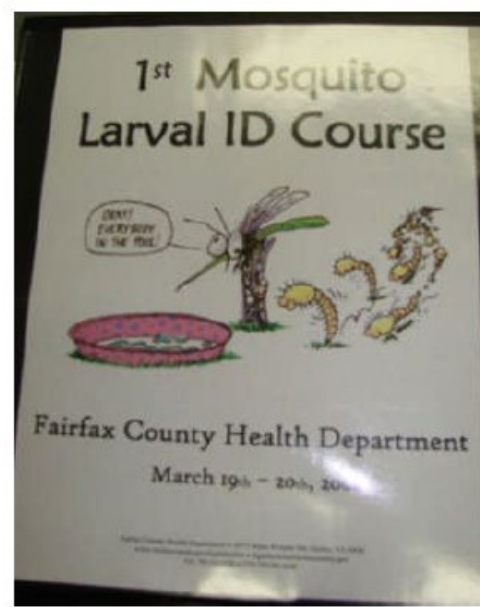
2006
Adult ID
Class





2007
Adult ID
Class

2008 Larval ID Class



2009 VMCA Larval ID Course

The VMCA held its first Larval Identification Course March 30 & 31 in Suffolk, VA. Dr. Bruce Harrison and Parker Whitt made the trip from North Carolina to teach the class. Participants spent time identifying mosquito larvae and learning some very useful techniques. The class was a success and a very big thanks to our instructors, class coordinator Charles Abadam, and the following sponsors who helped provide lunch for both days as well as educator lodging and travel expenses.

Charlie Pate, Central Life Sciences/Zoecon

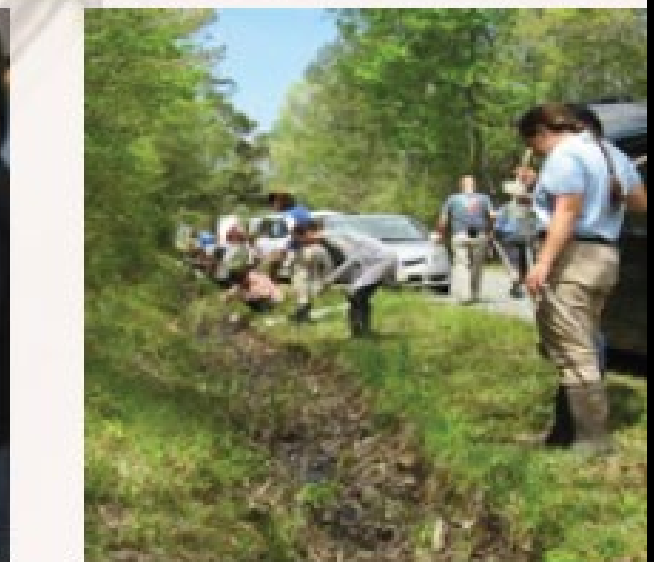
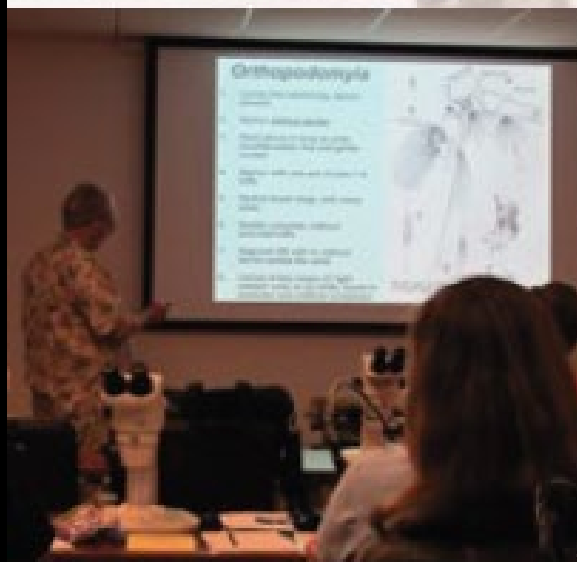
Ted Bean, Adapco Inc.

Al Kent, Univar USA

Jim Andrews, Valent BioScience



2017
Larval
ID Class



Tips to make life easier



Left: A water-containing crack in the mud

Submitted by Dr. Bruce Harrison

The above scenarios are intended to assist you in dealing with extreme weather and mosquitoes that are present in drought situations. These scenarios could change quickly and dramatically if a tropical depression or hurricane hits coastal areas of the southern and eastern U.S. during the summer or fall. Hopefully you have saved your records from previous tropical depressions, hurricanes, and frog choking heavy rains. Be prepared and *Good Luck!*



Lint rollers
save lives!

Quick Tip!

Lint rollers save lives.

If you've ever had tick larvae crawling up your pants leg, you know the horror.

A couple quick swipes and all is well again. You can even easily save them this way and send them to Dr. Holly Gaff's lab at ODU to contribute to their ongoing research.

Protect yourself out there!

#PPE

Helpful unpublished character for identifying *Cx. salinarius*

-Submitted by Andy Lima

Cx. salinarius as it is commonly seen, with golden to copper scales mostly absent.

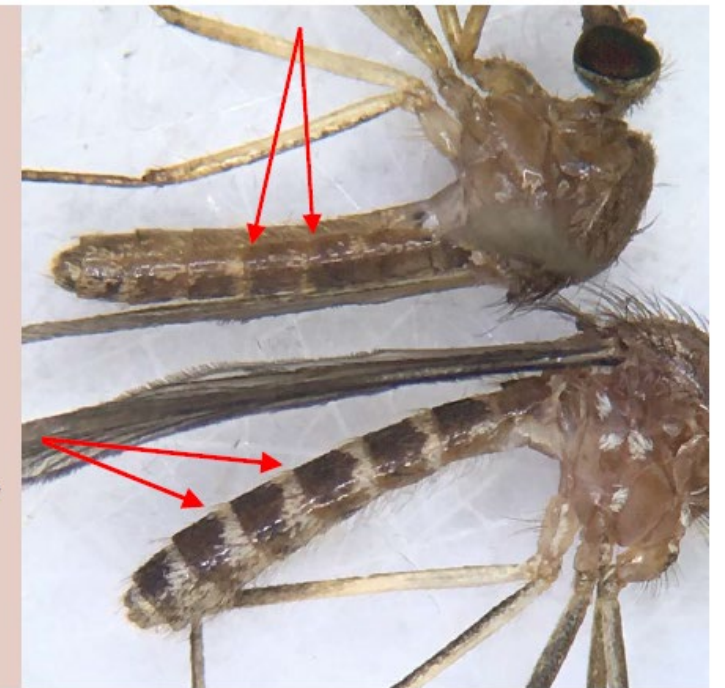
Even on this specimen, largely devoid of pale banding, we can see a line of pale scales at the apex of the previous abdominal segment.



Cx. salinarius as it is rarely seen: with abdominal segments VII and VIII completely covered in copper/golden scales and distinct pale abdominal bands.

Note the row(s) of pale scales on the apex of the previous segment.

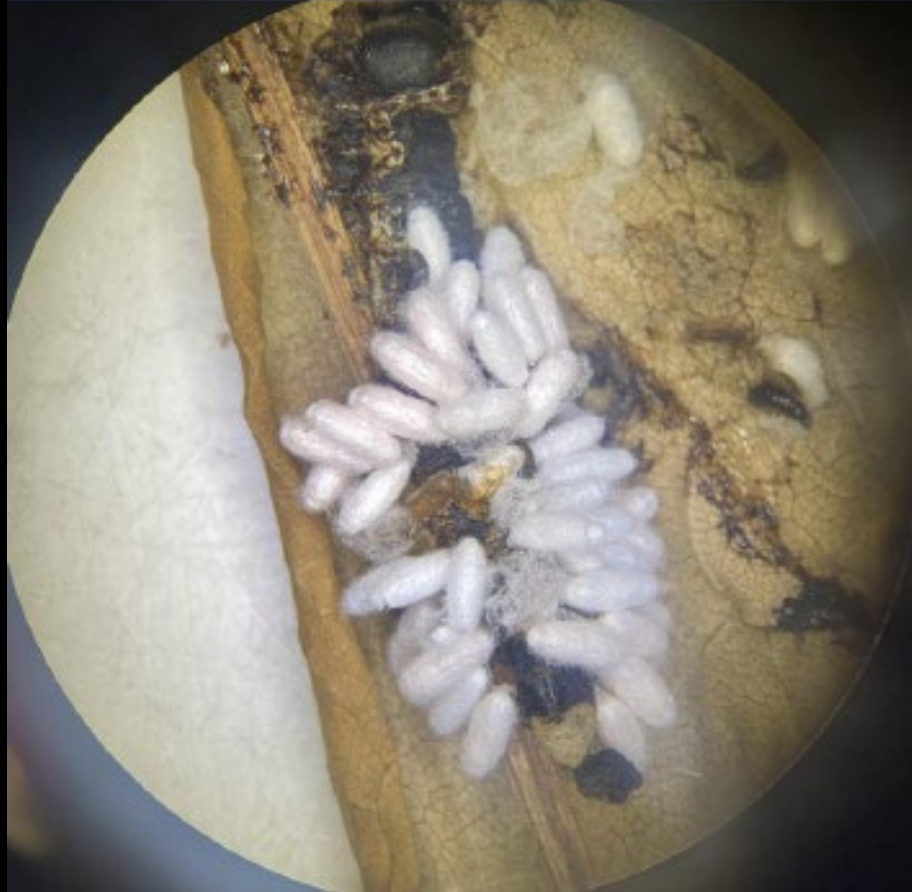
Cx. salinarius showing pale scales at apex of one or more abdominal segments.



Cx. pipiens, distinct basal banding only. Pale scales never found at apex of any abdominal segment.

Look at all the cool things you've found!

FINDS FROM THE FIELD



These are the cocoons of *Cotesia congregata*, a parasitoid wasp of the family Braconidae. The adult wasps attack and lay eggs on caterpillars from the Sphinx moth family, Sphingidae. This is a Catalpa sphinx moth.

-Submitted by Andy Lima,
Fairfax DCIP

Cover Story: *Aedes aegypti* in Norfolk



On May 19th as I was identifying the mosquitoes caught that day, I came across a specimen that was both strange and familiar. The object of curiosity was a single female *Aedes aegypti* collected in a CDC light trap. In my 20 years of mosquito surveillance, I had never collected or even seen an *Ae. aegypti* in person. It's a distinct mosquito and the lyre-shaped pattern found on top of the scutum is well known and easy to recognize. The color and markings make it possible to confuse it with at least three other species common to our area: *Aedes albopictus*, *Aedes japonicus*, and *Orthopodomyia signifera*. *Aedes japonicus* has previously been collected in Norfolk in recent years, but white tips on the palpus and white banding on the hind tarsomeres ruled out the possibility of *Ae. japonicus*. The line markings on the scutum of *Or. signifera* may look like *Ae. aegypti* at first glance but the two mosquitoes have little else in common. *Aedes albopictus* and *Ae. aegypti* are very similar in overall size and coloring but *Ae. albopictus* has a single narrow white stripe on top of the scutum. My specimen was undoubtedly *Ae. aegypti*.

Submitted by Penny Smelser

Bits and Bites



While you're out hunting for mosquito larvae, keep an eye out for *Plethodon cinereus*!

This little guy is an eastern red-backed salamander, which can occur in two different color phases. The top picture is photographed this month by Tim DuBois in Windsor and displays the red-back phase with a wide orange to red stripe down the length of body; the bottom photo (from [MD DNR](#)) shows both phases with the lead-back phase on the top which is characterized by a consistent gray to black color.

While common in the area, these salamanders can be tricky to find as they prefer dark and damp habitats. This is due to their lack of lungs, so they need the moisture to breathe. Typically found in or under logs, moss, or other moist leafy areas, they eat a variety of small invertebrates found in that habitat.

Submitted by Tim DuBois

WHAT'S THAT? ANSWER

That is the eye of a male common blue dasher, *Pachydiplax longipennis*, a common resident of calm waters throughout North America and a stalwart devourer of mosquito larvae that dare to call the edges of biodiverse pond ecosystems home.

As the pandemic rages around the world I've found a particular kind of solace in my macro lens. Chasing shy and wary insects around and focusing on the steady breathing required to capture sharp detail on moving subjects mere inches from the lens has a way of transporting me to a calmer and smaller world.

Dragonflies are particularly challenging and rewarding subjects. They are remarkable insects. Their huge compound eyes can have up to 30,000 ommatidia and they have anywhere between 11 and 30 opsin genes (we have three), coding for all manner of color, UV and polarized light detection. They whiz around at incredible speeds, acrobatic aerial artists constantly divebombing, sparring, and courting each other at a dizzying pace. When I manage to sneak up to one and capture its brilliant iridescence in 1:1 detail, I can't help but feel a spark of pure joy.

-Submitted by Rachel Kempf



Blue
dasher

WHAT'S THAT? ANSWER

That is an adult spotted lanternfly (*Lycorma delicatula*), an invasive planthopper originating from various areas of east Asia. It was first detected in the US back in 2014 in Berks County, Pennsylvania, and has since rapidly spread to Connecticut, Delaware, Maryland, New Jersey, New York, Ohio, West Virginia and Virginia. *L. delicatula* relies primarily on Tree of Heaven (*Ailanthus altissima*, below) not only as a source for food but also as site to lay its eggs. However, the insect does pose a broader threat to the country's grape, orchard, and logging industries.

First detected in Frederick County, Virginia in 2018, spotted lanternfly's life cycle can be broken down into: egg, four stages of larvae, and adult. Adults will begin to lay eggs in late summer and early fall; the eggs will overwinter and hatch out by June of the following year. The hatchlings will then forage for food, feeding off the sap of their host plant, *A. altissima*, but are also known to feed on a variety of tree species including sumac, walnut, maple, oak, tulip poplar, hickory, poplar, sycamore, birch, elm, fruit trees, basswood, sassafras, serviceberry, ash, and black gum. Cultivated and native grapes are also considered at risk of infestation.

If you believe you've seen spotted lanternfly, in any of its stages, or want more information, you can fill out a report your local [Virginia Cooperative Extension](#) office.

Submitted by Francis Valera, Prince William County Mosquito & Forest Pest Management



Photos by Eli Hosen, Prince William County Mosquito & Forest Pest Management

Spotted
lanternfly

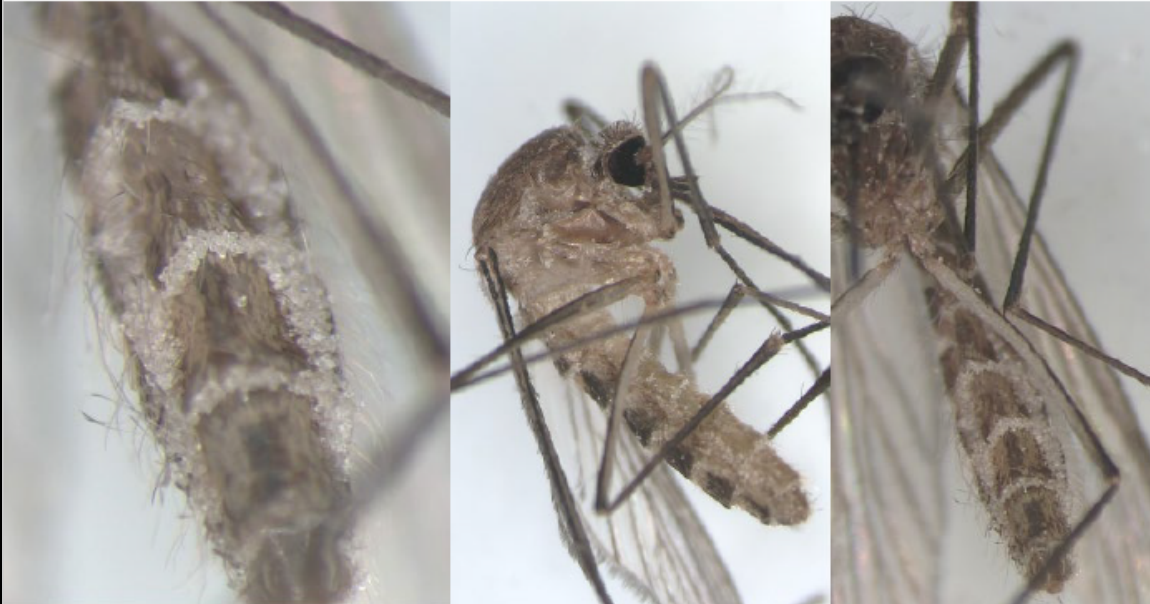
WHAT'S THAT? ANSWER

During two separate (one week apart) trapping events at one particular site, we came across three *Cx. pipiens* covered in an odd clear spherical fungus. After further research, we learned that what we may have found was a type of entomopathogenic fungus (EPF). These fungi are microorganisms that infect insects and are often fatal. The infection begins with a contact action in which the spores of the EPF attach itself to the insect's cuticle and begin to germinate. From this point, appressoria begin to emerge which start the process of penetrating the host's exoskeleton. Once the EPF has entered the insect's body cavity, it begins to produce hyphae. From this stage the EPF release toxins causing paralysis and nutrient depletion, ultimately leading to the insect's death.

Today, there are many applications of entomopathogenic fungi for farm use to help manage the insect infestation of crops. However, as a means for mosquito control, EPF are underutilized and underestimated due to a lack of knowledge and research on its applications and effectiveness towards mosquito populations. Under the right conditions, EPF could be used for mosquito control in storm drain systems where use of bacterial or chemical adulticides may be problematic. In a recent study conducted in Coachella Valley, California, the use of EPF in storm drain systems held a lot of promise while also presenting some challenges. If you are interested in learning more about the study, you can read the article [here](#). Below are some images of the EPF attached to our specimens.

-Submitted by TJ Carner, York County Mosquito Control

David A Popko, Jennifer A Henke, Bradley A Mullens, William E Walton, Evaluation of Two Entomopathogenic Fungi for Control of *Culex quinquefasciatus* (Diptera: Culicidae) in Underground Storm Drains in the Coachella Valley, California, United States, *Journal of Medical Entomology*, Volume 55, Issue 3, May 2018, Pages 654–665, <https://doi.org/10.1093/jme/tjx233>



Entomopathogenic
fungi

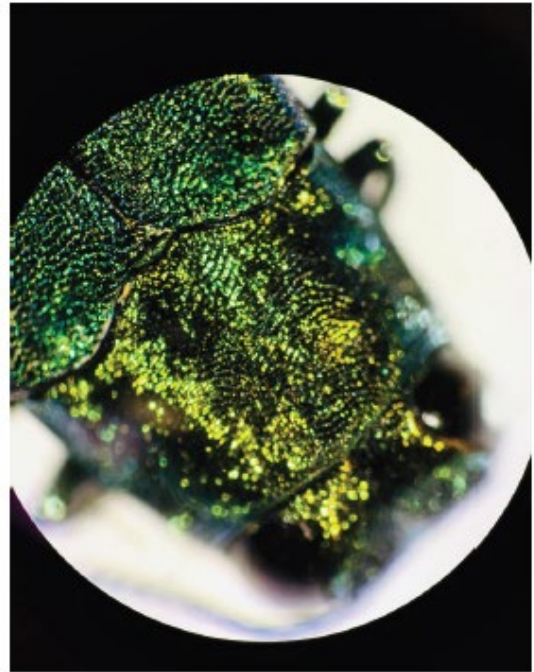
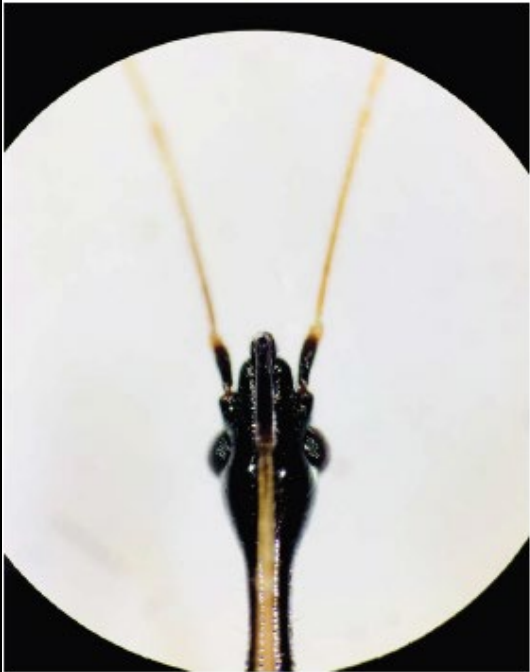
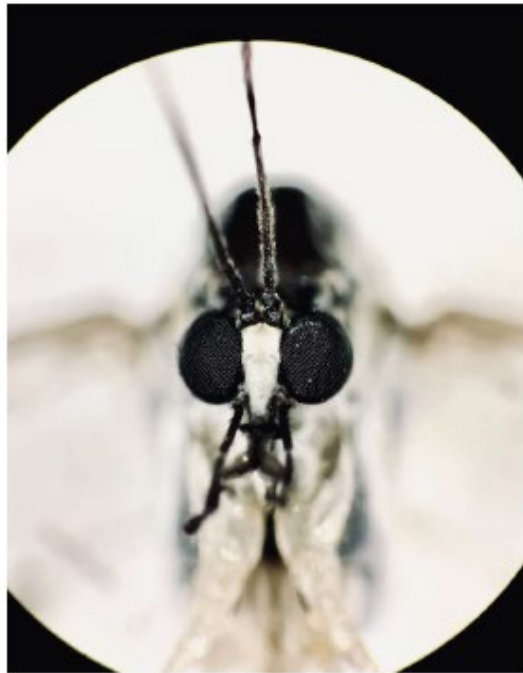
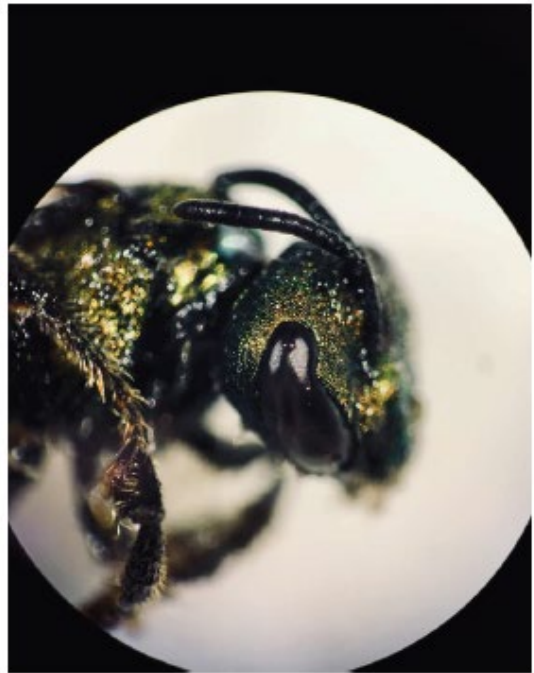
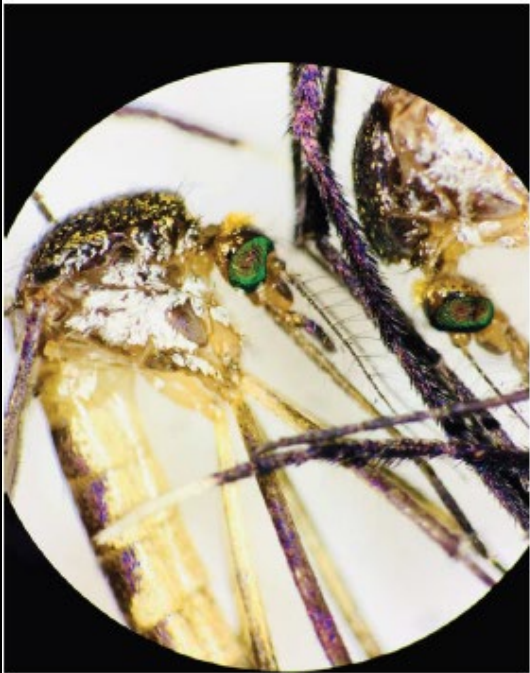
WHAT'S THAT ANSWER



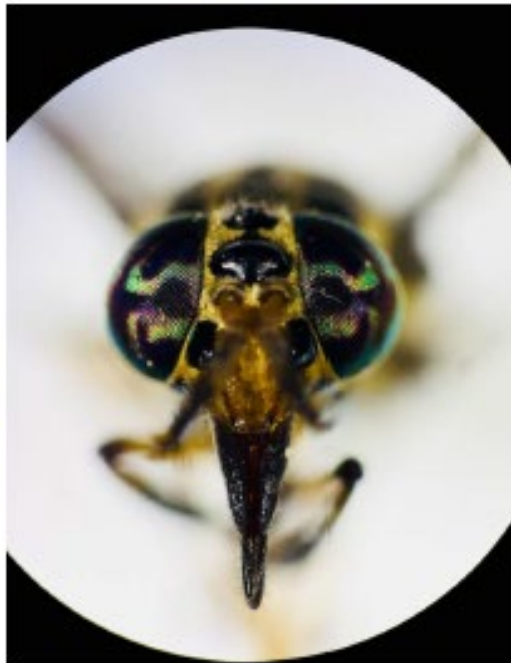
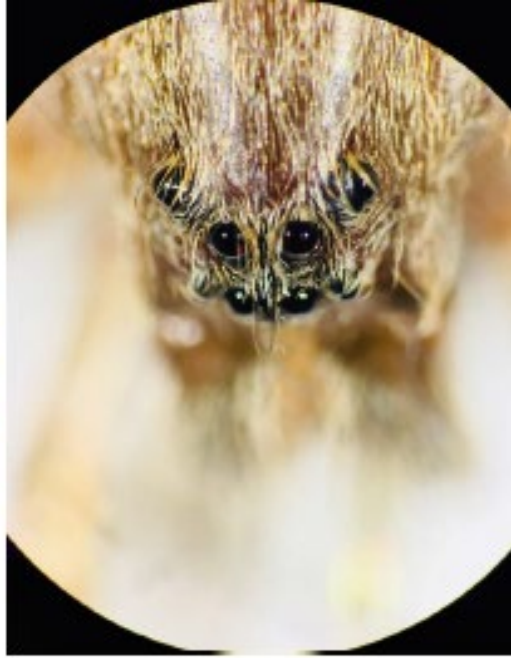
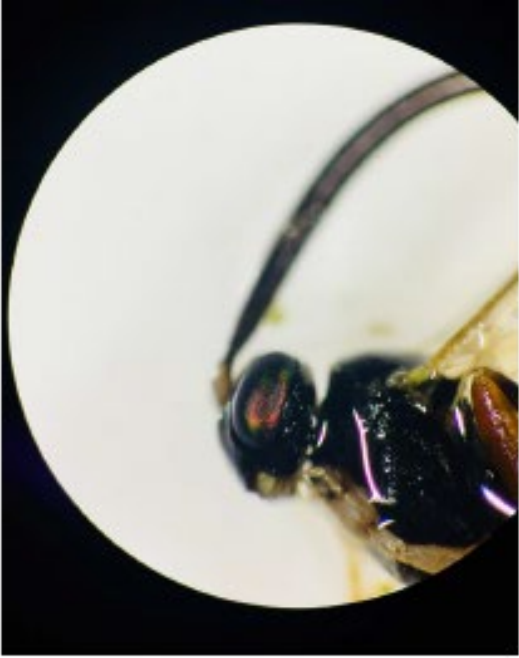
Promachus rufipes perched on a leaf; photography by Alex Riley

Bee panther

THAT is the face of cuteness, scientifically known as *Promachus rufipes*. Commonly referred to as the bee panther or red-footed cannibalfly, they are robber flies (insects in the family Asilidae) and are so named after their aggressive predatory behaviors. They feed primarily on other insects, ambushing midflight, and using their hypopharynx (piercing organ of the proboscis) to puncture any thick integument. They then inject a neurotoxin to paralyze their prey and enzymes to breakdown the internal tissues so that they may easily suck up the liquified nutrients through the labium and maxillae (food canal of the proboscis). YUM! While these fierce (but c'mon, they're adorable, look at those eyes!) predators have been known to feed on anything they



Microscopic
portraits
by
Rachel Kempf



Microscopic
portraits
by
Rachel Kempf

Check out the extracurriculars!

ADVENTURE CLUB

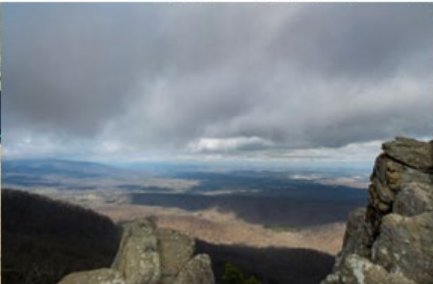


L-R: Emma & David Gaines, Jay Kiser, Kaitlyn Price, Kristin Skees, Cassidy McKelvie, Matt Madariaga, & Loki

On March 19th, the eve of the Vernal Equinox, the VMCA Adventure Club made their **first excursion of the year to Humpback Rock**. The trail was settled nicely in the Blue Ridge Mountains and with Spring slowly peaking her head up, the weather was perfect for this time of year. It was a lovely 62°F with the sun shining and the wind blowing just enough to keep us from getting overly heated. We chose to do the Humpback Rock loop, which we clocked at about 4.5 miles. So around 10am, seven of us, and a canine companion, adventured to an elevation of 1,102 ft. The initial climb was steep but the views were incredibly rewarding. Once arriving at the top, we were met with a sharp jagged overlook with views of the mountains for miles. It was not overly crowded and we enjoyed our time spent there.

We hope to do an excursion like this one once a month, with our next one being April 23rd at Mount Pleasant, near Buena Vista, VA. If anyone is interested, please contact [Jay Kiser](mailto:jkiser@suffolkva.us) for more information and to be put on the email list.

Submitted by Kaitlyn Price



ADVENTURE CLUB

On May 21, 2022, the VMCA Adventure Club met up for a canoeing excursion at **Merchant's Mill Pond** in North Carolina. We had excellent weather and the park was full of beautiful scenery. Merchant's Mill Pond is a NC State Park with over 3,500 acres of cypress swamps and hardwood forests. We spent the morning wandering the waterways in our rented canoes. Even though we had hours to explore, we only saw a small amount of what the park has to offer. **The pond is home to lots of wildlife species, including American alligators.** Sadly, we did not see any gators, but we did see lots of turtles, birds, and a snake. Luckily for us, the environmental factors were on our side and our trip was mosquito free. It was a great adventure, and I would definitely go back to see more of the park. Thank you for the recommendation, Penny.

Over the next couple months, we are planning a few more adventures. In August, we may try a sunset kayak outing in Virginia Beach. In September, we are planning to hike Peaks of Otter. On October 15, we will be riding our bikes on the Capital Trail in conjunction with the Tour de Skeeter. If you are interested in joining us, please email me at jkiser@suffolkva.us to get the details.

Submitted by Jay Kiser



2022 TOUR DE SKEETER



2022 TdS group in front of Indian Fields Tavern; Largest attendance to date; Photo credit: Carla Caulkins



Left: TdS kids sporting the new children size shirts; Middle: TdS attendees walking their dog (Loki) that is wearing the 2021 TdS shirt; Right: TdS attendees enjoying the 2022 event; Photo credits: Karen Akaratovic and Carla Caulkins

VMCA HIKING GROUP

Sadly, setting up hiking and other adventure trips has been difficult this year with unpredictable weather. Snow, ice, and rain have all been looming issues that kept us off the mountains. On May 15, the weather was beautiful, and we were finally able to make it to Cole Mountain. May was not without its concerns though, but we still had to overcome the gas shortage of 2021 (or was that the frantic hoarding of gas) and washed out road conditions. Tim DuBois, Jessica DuBois, David Gaines, and Jay Kiser all joined in the adventure of hiking part of the Appalachian Trail. The hike was a 6-mile loop peaking along the bald ridgeline of Cole mountain. From the top, beautiful vistas could be seen to the east and west.

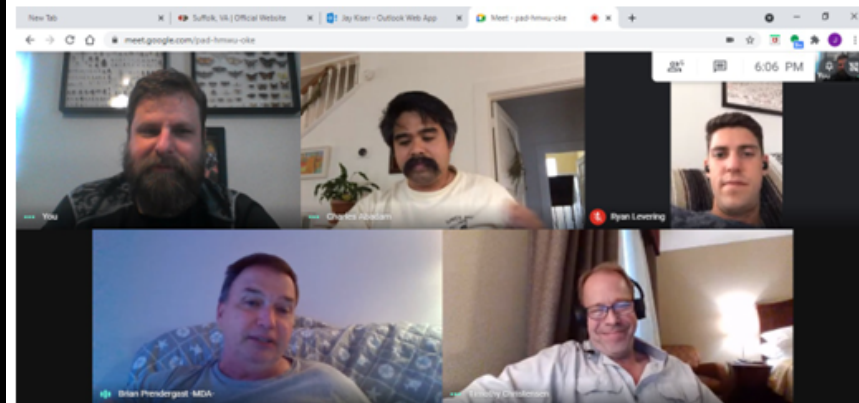
In June, we decided to combine the Tour de Skeeter with our adventures. Several of us ventured on to the Capital Trail with our bicycles. There were no amazing mountain top views, but the rolling farmland of Charles City County provided excellent scenery.

Due to busy schedules and injuries, we have not been able to set up another adventure. Winter is coming, but the chilly temperatures are great for hiking. I would like to set up a hike for December or January (depending on how busy the holiday season is for everyone). This spring or fall, I would like to set up a kayak trip at Merchant's Mill Pond or Windsor Castle Park (kayak rentals are available). If anyone is interested in joining our adventures, please ask Jay Kiser (jkiser@suffolkva.us) to be put on the email list.



Left: Pictures of the May hike to Cole Mountain. Pictures taken by Tim DuBois.

VMCA VIRTUAL BOOK CLUB



We are still meeting monthly for our virtual book club (peer reviewed journal articles). We meet on the first Monday of each month from 6 to 7pm. We normally have about 4 to 7 people meet up each get-together. If you are interested in joining, please ask Jay Kiser (jkiser@suffolkva.us) to be put on the email list

Left: Google Meets screen shot from May's Virtual Book Club

Don't forget all that outreach inspo



L: Rachel Kempf with her paper mache creations, M: Albopictus mask, R: Department Chief rocking the mask at the photobooth



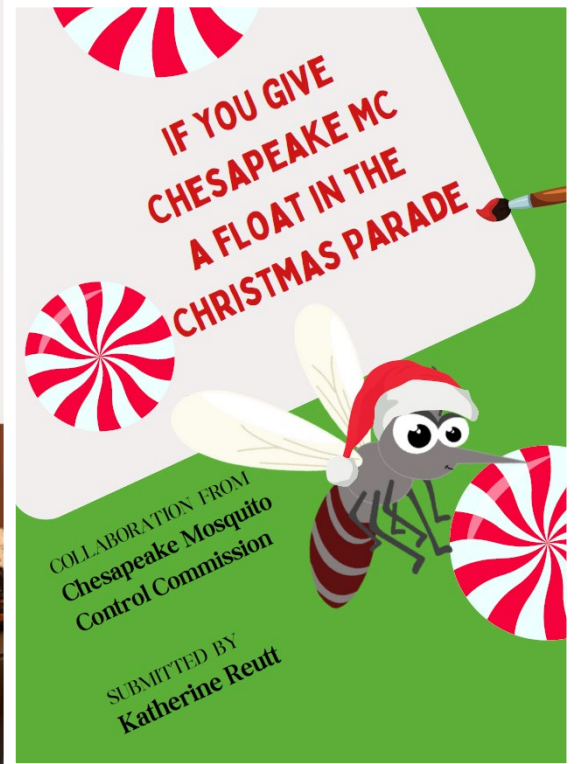
Pablo Quiñónez in tick costume, going before the Board of Supervisors.

National Night Out is Not Just for Cops

DCIP Staff, at the request of Delegate Bulova, joined in the National Night Out celebration over in the Burke community this August proving that this event is Not Just for Cops. Carl, Kylie, Rachel S and Rachel K worked this event with enthusiasm. We got Sharon Bulova to play with our cockroaches, had a photo shoot with Mcgruff the crime dog, climbed the rock wall and schmoozed Police Chief Rohr and Chairman Bulova. The citizens appreciated the mosquito repellent, the hand sinks and the Health Department for being part of this celebration.



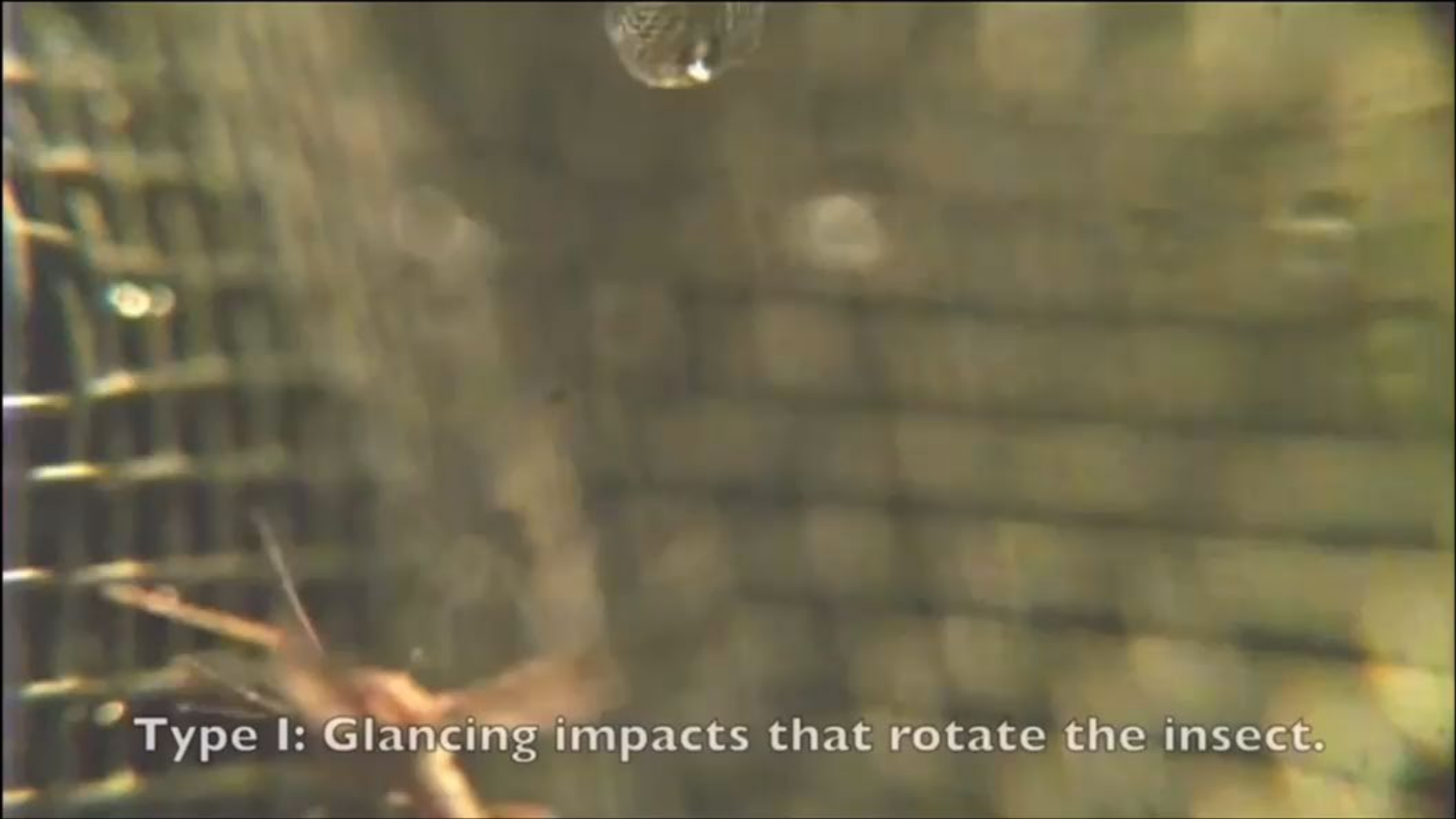
We will use foam cubes, fabric, paint, PVC pipes, wooden dowels, and lots of glue and tape!



We will put it all together.

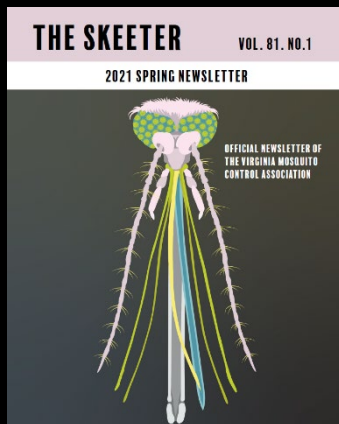


And when reading just won't cut it...

A close-up, high-speed video of an insect's head and antennae as it glances off a surface, causing it to rotate. The insect is positioned in the lower-left corner, with its head and antennae extending towards the center. The background is a textured, light-colored surface, possibly a leaf or a piece of paper, with some horizontal lines visible. The lighting is bright, highlighting the insect's features and the texture of the surface. The overall scene is captured in a way that emphasizes the rapid movement and the resulting rotation of the insect.

Type I: Glancing impacts that rotate the insect.

THANK YOU
to all of *The Skeeter*
contributors over the years



Thank you for watching!
Please READ and SUBMIT
mosquito-va.org/the-skeeter

