NOVEMBER 2021 VOLUME 9, ISSUE 1

ACME Newsletter

ACME participation at the ASTMH 70th Annual Meeting, Nov. 17-21, 2021, held virtually:

This year, ACME will be sponsoring two symposia, and a virtual booth. We hope that you can make it to these events!

American Committee of Medical Entomology (ACME) Virtual Symposium I: Annual Business Meeting, Awards, Hoogstraal Medal Presentations
November 18, 2021, 12:45 PM - 2:30 PM, Eastern Time Zone

This symposium provides a forum for exchange of information among people interested in research on arthropod vectors of disease. This session features a short ACME business meeting followed by presentation of the 2021 travel awardees. This serves in part to highlight the next generation of medical entomologists. The session moves to the presentation of the Hoogstraal medal and a plenary lecture by the recipient.

Presentation Length in Minutes	Title	Speaker	Live, pre-recorded or pre-recorded as group
5 (optional)	Symposium Organizer	Gabriel Hamer	
5 (optional)	Co-Chair	Douglas Norris	
20	ACME Annual Business Meeting and Awards	Gabriel Hamer	**pre-recorded**
5	Spotted Fever Group Rickettsioses in El Salvador	Kyndall Dye-Braumuller	**pre-recorded**
5	Red meat allergy and the lone star tick (*A. americanum*)	Paulina Maldonado-Ruiz	**pre-recorded**
5	Serological biomarker as epidemiological tool for the assessment of human exposure to *Aedes albopictus*	Sara Buezo Montero	**pre-recorded**
10	Introduction to Hoogstraal Medal Awardee	Lyric Bartholomay	**pre-recorded**
25	Harry Hoogstraal Medal Presentation and Plenary Lecture	Bruce Christensen	**pre-recorded**
5	Conclusion and Passing of Gavel	Gabriel Hamer	**pre-recorded**

Fresh Voices in Neglected Vector-borne Diseases
November 18, 3:00 – 4:45 PM Eastern Time Zone

The field of medical entomology has risen to face the challenges of the global spread and emergence of new vector-borne diseases. Major vector-borne diseases such as malaria and emerging pathogens such as Zika virus remain a focal point on the public health landscape as they impact millions of people globally. Advances continue to be more quietly made in understanding and combating the array of neglected vector-borne diseases that include Chagas disease, leishmaniasis, tick-borne relapsing fever, African trypanosomiasis and re-emerging arboviruses such as La Crosse encephalitis virus. The aim of this symposium is to highlight research, findings and new voices in vector-borne disease systems that are less often in the spotlight.

Presentation Length	Title	Author Block
	Symposium Organizer	Douglas Norris *Johns Hopkins Bloomberg School of Public Health, United States*
	Co-Chair	Mary Gebhardt *Johns Hopkins Bloomberg School of Public Health, United States*
10m	Introduction	Mary Gebhardt
15m	Bionomics of the neglected triatomine vectors of Chagas disease in the United States	Sarah Hamer *Texas A&M University, United States*
15m	Complexities of parasite-microbiota-sand fly interactions in New World *Leishmania* Transmission	Nagila Secundino *FIOCRUZ, Belo Horizonte, Brazil*
15m	Mating stimuli cause dramatic changes in the female Tsetse Fly (*Glossina morsitans*) reproductive tract at the levels of gene expression, biochemistry and morphology	Geoffrey Attardo *University of California, Davis, United States*
15m	Triatomine microbiome-trypanosome-environment associations across multiple scales: Implications for Chagas disease transmission	Kaylee Arnold *University of Georgia, United States*
15m	The neglected story of La Crosse virus in Appalachia and how community-driven surveillance is enhancing its awareness to find solutions	Becky Trout-Fryxell *University of Tennessee, United States*
15m	Genetic diversity and distribution of tick- borne releasing fever spirochete	Job Lopez *National School of Tropical Medicine at Baylor College of Medicine, United States*
5 m	Concluding Statements	Douglas Norris

Visit and support the ACME Virtual Booth during #TropMed21!
ACME will sponsor a booth at the 2021 ASTMH virtual meeting to promote its initiatives, raise funds, teach people about the rich history of ACME, and attract new members. Although we unfortunately still won't have a chance to distribute your favorite entomology collectors' items this year, you will still have the opportunity to donate funds to support ACME initiatives. Any and all contributions are always greatly appreciated.

Post Positions and Training Opportunities at the ACME Booth
Do you have a job or training announcement that you would like to post at the ACME booth? ACME members can add their own *links* to relevant job advertisements directly to this google doc.

Virtual Career-networking Event
We thank trainee representative Adeline Williams and ACME volunteers for assisting with the virtual networking event at the Annual Meeting. Trainees and mentors who signed up to participate, please remember to join us for this joint ACME/ACAV virtual event to be held on November 19, 5:15 – 7 pm EST during the Annual Meeting.

Arthropod Containment Guidelines Addendum

We are pleased to announce the publication of "Containment Practices for Arthropods Modified with Engineered Transgenes Capable of Gene Drive Addendum 1 to the Arthropod Containment Guidelines." This new guidance published by ACME-ASTMH describes standardized containment practices for gene drive-modified arthropods. There had previously been no standardized recommendations on containment practices for arthropods modified with engineered transgenes capable of gene drive. To address a recognized need for standard guidance, ACME, with support from the Foundation of the National Institutes of Health (FNIH), convened an advisory group that was tasked with developing recommendations for containment and best practices for research involving arthropods that contain engineered transgenes capable of gene drive. The resulting set of guidelines outlined in the addendum address containment considerations for instances in which a risk assessment indicates the potential for establishment of a new arthropod vector species or genetically modified arthropods capable of gene drive in the local environment. We thank members of the ACME drafting committee, which included ACME members Nicole Achee, Zach Adelman, Mark Benedict, Ellen Dotson, Molly Duman Scheel, Monika Gulia-Nusse, and Brian Tarimo for their efforts, as well as the greater ACME community which provided useful feedback to support the team's writing efforts and strengthen this document. The addendum, which was published open-access, is currently available online at *Vector-Borne and Zoonotic Diseases* and will be published in print in early 2022, at which time we will announce the date and time for an educational webinar that will serve to further introduce the guidelines.

ACME Awards and SC Johnson Sponsorship

Awards Announced at the Annual Meeting:
We will announce recipients of the following awards at this year's meeting:

ACME Travel Awards: ACME now offers three Young Investigator Travel Awards at the Masters, Doctoral/Post-doctoral and International level. All research must involve arthropods of medical importance. Recipients will receive a complimentary registration to the Annual Meeting and *up to* $900 to support travel and accommodation costs.

The Harry Hoogstraal Medal for Outstanding Achievement in Medical Entomology: Nominations for the Harry Hoogstraal Medal for outstanding Achievement in Medical Entomology may be submitted online during the Call for Nominations. Each year, the Executive Council shall consider all nominations so submitted as well as any nominations submitted during the previous three years, and decide whether to make an award at the business meeting to be held during the current year Annual Meeting. Any living medical entomologist not serving on the Executive Council is eligible to be selected to receive the award.

SC Johnson Renews Commitment to Sponsor ACME Awards
We are extremely pleased to announce that SC Johnson has renewed its sponsorship of ACME! Their commitment will allow us to continue to honor outstanding scientists through presentation of the ACME Breakthrough in Medical Entomology Award, which recognizes recent contributions to the study and/or practice of medical entomology. This gift will also allow us to continue to grant the ACME Future Leaders Fellowship in International Medical Entomology. This fellowship is a competitive award that is offered to outstanding junior medical entomology researchers and showcases individuals who are non-US citizens and that have matched interests to the ACME objectives of promoting medical entomology and reducing the burden of human diseases transmitted by arthropods. We sincerely thank SC Johnson for their continued support of these important initiatives.

ACME Leadership Developments

ACME welcomes new council members Reneé Ali, (The University of the West Indies at St. Augustine, Trinidad and Tobago, Trainee Representative), Dr. Nsa Dada (University of Abomey-Calavi, Benin), Dr. Berlin Londono (Tulane University), and Dr. Pamela Pennington (Universidad del Valle de Guatemala). Past-chair Ellen Dotson and Councilor Christopher Barker will complete their appointments on the ACME council this year. Many thanks to all members of the Executive Council (new, current and departing) for their service to ACME!

Get Involved!
If you would like to learn more about ACME activities or serving on the ACME Executive Council, please contact Gabe Hamer (ghamer@tamu.edu).

ACME Financial Support

At the end of FY21, net assets for all ACME funds totaled $29,502. Revenue from membership dues in FY21 totaled $2,625, an increase of $500 over the prior year. We have received $3,770 in member donations since January 1, 2021. We wish to extend our gratitude to our ACME fiscal year (FY) 2021 donors, listed below, and to the parent Board for their ongoing support of our medical entomology initiatives! Please remember to renew your membership if you have not already done so and consider adding a contribution to ACME. Your donations support important causes such as trainee attendance at the ASTMH Annual Meeting and other ACME endeavors. If you are aware of potential donors or have fundraising ideas to share with the council, please contact Molly Duman Scheel (Secretary-Treasurer), mscheel@nd.edu.

Thanks to our ACME FY2021 Donors

Sasha Rafi Azar
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Molly Duman Scheel
Sam R. Telford
Edward Walker
Anonymous Donor

"Donating to ACME is a wonderful feeling, knowing contributions will facilitate leaders of 'our community' in serving as stewards for the next generation of medical entomologists."

-Anonymous Donor

"Prior to the formal formation of ACME, I was asked by Charlie Bailey to help write the By-laws for the proposed group, as I was the Chair of ACAV at the time. I did so and have been a member of ACME since Day 1. I still think it is an excellent, accomplished and useful subcommittee, with knowledgeable and innovative members and am proud to be able to say so."

-Charlie Calisher

"As evidenced by PAMCA in Africa, there is today a large community of skilled, enthusiastic and ambitious medical entomologists who are irreplaceable. Through its international awards, ACME provides one route to supporting them."

-Philip McCall

"Donating to ACME is a no brainer – this is my home base in the much bigger ASTMH meeting, and a group that is devoted to investing in and nurturing the next generation of medical entomologists."

-Lyric Bartholomay

William S. Romoser

1940-2021

The American Committee of Medical Entomology would like to honour the life and legacy of former Chair, William *("Bill")* S. Romoser. Bill was born October 18, 1940, in Columbus, Ohio, to William Karl and Clara (Sherburne) Romoser. He attended Eastmoor High School and The Ohio State University, graduating in 1962 with a B.S. in Agriculture (Zoology) and in 1964 with a PhD in Entomology, under the supervision of Carl Venard.

He began his professional academic career as Assistant Professor of Entomology at Ohio University (OU) in September 1965, advancing to Associate Professor in 1970 and Full Professor in 1976. He remained associated with OU until his retirement in 2010, after which he retained the title of Professor Emeritus of Arbovirology and Medical Entomology.

In 1989 he co-founded OU's Tropical Disease Institute, which he directed until 1998. He also directed the International Development Studies Program at OU's Center for International Studies between 1997 and 2000.

Bill was a researcher at the Florida Medical Entomology Laboratory (1971-1974) and at the United States Army Medical Research Institute of Infectious Diseases (1983-2003), where between 1984 and 1985 he was a National Research Council Senior Postdoctoral Research Associate. In 1992 Bill was elected Chairman of the American Committee of Medical Entomology. He was also an active member of the Ohio Mosquito Control Association, which he presided between 1995 and 1996.

Bill was a prolific academic researcher who produced dozens of scientific papers. He was the sole author of the original editions of the book '*The Science of Entomology'* (1973 & 1981) and co-author of the book's 3rd and 4th editions (1994 & 1998). Additionally, he was a contributing author to various books in the field of medical entomology, including *Biology of Disease Vectors* (1996) and *Medical Entomology: A Textbook on Public Health and Veterinary Problems Caused by Arthropods* (2000). As a mentor and educator, Bill was instrumental in the academic formation of several generations of professionals and researchers from all around the world.

Bill passed away on May 5th, 2021, at the age of 80. He is survived by his wife Margaret and daughters Suzanna, Anne, Regan and Kelley.

Contributed by Marco Neira
ACME Councilor

Richard Hewish HUNT, Ph.D. (Wits)
1939-2021

Richard Hunt was one of the most influential African entomologists of the century. This is reflected in his publications, certainly with his studies of *Anopheles funestus*, and the species groups of other anophelines. During his lifetime, most of the malaria entomologists came from Europe, but Richard was home grown. This is reflected in his associates and colleagues, most of whom were also African born and who came from almost the entire breadth of the Continent. Richard and I started out together in what was Rhodesia (now Zimbabwe) when we joined the Ministry of Health, the Malaria and Bilharzia Research Laboratory. In fact we first worked together assessing the impact of schistosomiasis (or Bilharzia as it was called over most of the Continent) in the country. We moved from farm to farm around Shamva in the northeastern area using a caravan, microscopes and centrifuge tubes examining urine specimens. At that time the Ministry of Health was strongly supporting malaria eradication and was building a science based approach to malaria elimination.

Richard had joined the lab almost straight from school, but his interest in entomology was developing and strong. This prompted him to study, and he received the Advanced Certificate in Zoology from the London City and Guilds in 1967. He joined a group of entomologists working in the then Blair Research Laboratory studying mosquito behaviour and detecting new forms which enabled him to accept a Rotary International Technical Training Scholarship for one year at the London School of Hygiene and Tropical Medicine under the tutelage of George Davidson. There he conducted a cytogenetic study which provided concrete evidence for a 6th species in the *Anopheles gambiae* complex from Uganda. Richard then moved to South Africa and joined the prestigious South African Institute of Medical Research, first as technician, then Senior Technician and then MSc (Wits) with distinction 1984 and PhD (Wits) in 1989 when he became Head of the Department of Medical Entomology at the SAIMR, a most prestigious position in a World-renowned Institution. His career had expanded to WHO and University of the Witwatersrand as advisor in medical entomology mainly in Africa. His research projects focused on *An. funestus* and *An. gambiae* complex, containing the major malaria vector mosquitoes in Africa; specifically insecticide resistance, molecular genetics and novel vector control methods. Supervision was given to postgraduate students in the above projects as well as those students from neighbouring countries whose projects were more field-surveillance based. His work was extensive but strongly focused on African malaria vectors, he has 117 papers published and he marshaled many of today's medical entomologists into the field.

Richard was married to Maureen Coetzee, a fellow entomologist who he met while doing her Masters degree at the University of the Witwatersrand. They married in 1989 and she too excelled in medical entomology with a PhD. She became the Head of the Department of Medical Entomology at the SAIMR in 1995. The name changed to Vector Control Reference Unit at the National Institute for Communicable Diseases around 2002. They retired in 2018 to the Cape Garden Route (Great Brak River, near George). He is survived by his wife, Maureen and sons Graham who lives in Perth, Australia, and Warren, and daughter, Tamsin who both live in Johannesburg.

Contributed by Clive Shiff, Ph.D. (Rhodes)
Professor, Department of Molecular Microbiology and Immunology
Johns Hopkins Bloomberg School of Public Health

Join ACME on Twitter and My Communities

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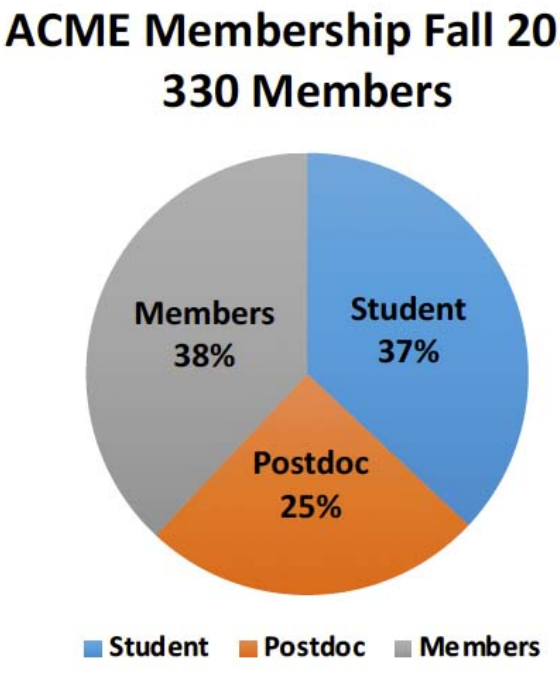
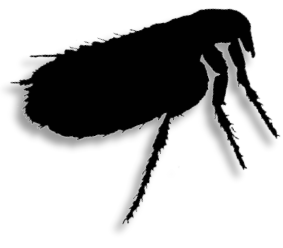
How can you keep up with ACME between newsletters? Please remember that you can post and receive announcements by subscribing to My Communities. You must visit the link to sign up for and receive messages through this message board that delivers notes to subscribers' email accounts. This is a great way to interact directly with other members of our community and to receive messages which pertain to medical entomology. Be sure to also follow us on Twitter at ACME@ACME_ASTMH. We have been active on Twitter for one year and have accumulated 522 followers across the globe! We will be tweeting live news updates from the ASTMH conference and will continue to use this as a means of communicating important deadlines, etc. throughout the year. Do you need to send a job ad or other information out to the ACME community? You can direct message us on Twitter or can forward your tweet to Molly Duman Scheel (mscheel@nd.edu) or Adeline Williams (Adeline.Williams@colostate.edu).

Renew your membership

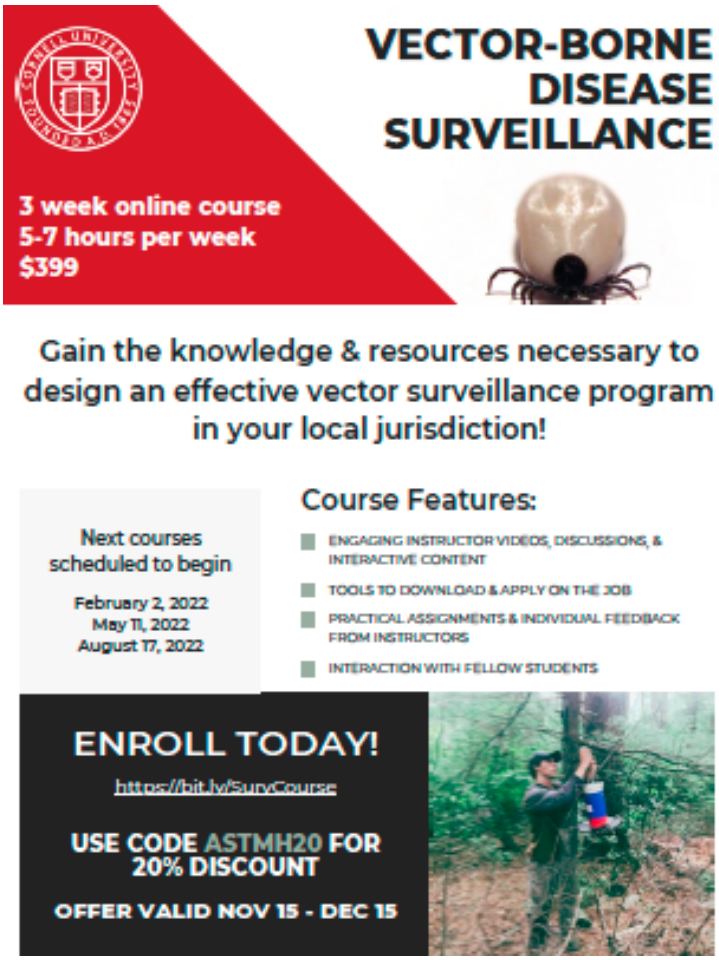
RENEW YOUR MEMBERSHIP! Please remember that even when the meeting is virtual, your membership dues of $25 are an important source of support for ACME initiatives and activities! Please visit the ASTMH website for full membership dues information. Your ACME membership connects you to a diverse global community of Medical Entomologists at the ASTMH Annual Meeting and throughout the year. Membership allows you to access ACME communications, including our bi-annual newsletter, email communications that include job postings, and announcements about current events that may impact medical entomology practice and research. Your membership also allows us to help promote your medical entomology initiatives through social media. We follow our members on Twitter and retweet their announcements to a community of >500 followers. Remember that membership is free for students and post-doctoral trainees when they join ASTMH. During uncertain times, ACME takes great pride in fostering community for our trainees, giving them access to job openings, continuing education, as well as opportunities for awards to participate in the ASTMH meeting and advance their careers.

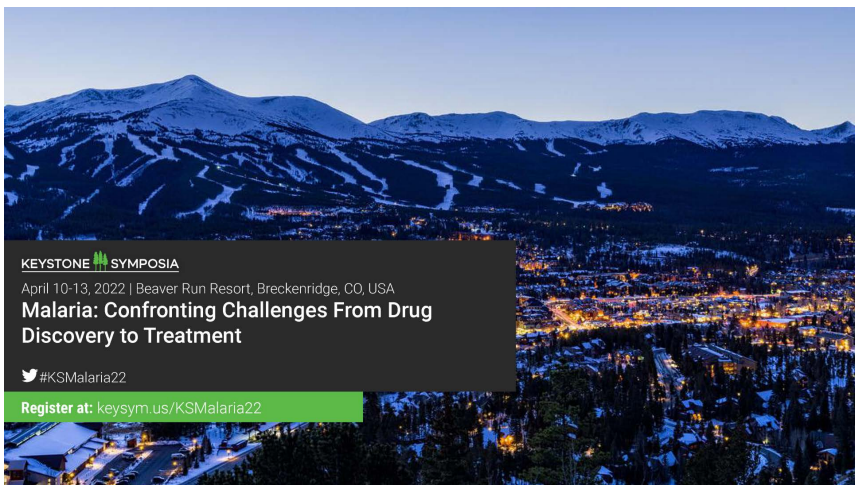




Workshops and Courses

The next Biology of Vector-borne Diseases Six Day Course will be held on June 13-18, 2022. The course is hosted by the Center for Health in the Human Ecosystem at the University of Idaho in Moscow, Idaho and is directed by Shirley Luckhart, sluckhart@uidaho.edu and Ed Lewis, eelewis@uidaho.edu. Details can be found here: http://www.uidaho.edu/vector-borne-diseases.





Studying Tick-borne Diseases of Wildlife in California and Nevada.

Members of the lab of Dr. Janet Foley of the Pacific Southwest Center of Excellence in Vector-Borne Diseases (PacVec) and UC Davis made two trips to Baja California, Mexico this summer to study tick-borne diseases in wildlife. Janet Foley and Laura Backus traveled for PacVec's Border Tick and Rickettsial Surveillance (BiTeRS) program, teaching partner organizations about ticks and tick collection and management in Southern California. Participants learned to identify ticks and how to collect them from the environment with flagging and trapping.

Trapping lagomorphs (rabbits and hares), for collection of ectoparasites and testing for rickettsial pathogens.

The Gulia-Nuss lab continued to monitor tick populations in Nevada County, which has established *Ixodes pacificus* populations. Monika Gulia-Nuss also worked to train the next generation of vector biologists on a family outing to Grass Valley, CA.

Left: Early morning tick drag during a family trip to Grass Valley, CA (Nevada County). These drags are made of white felt fabric hot glued to a dowel. Right: Dermacentor tick on grass blade. Both males and females were out seeking hosts in the early morning cooler temperatures. North Valleys, Reno, NV. (Photos contributed by Monica Gulia-Nuss).

Assessing Mosquito Behavior and Activity in Madera, CA

PacVec members and PhD candidates, Olivia Winokur and Sarah Abusaa, along with undergraduate Malak Saleh and MPVM student Gabriela Novo de Oliveira, from Dr. Chris Barker's lab at UC Davis, spent six weeks in Madera, California collaborating with the Madera County Mosquito and Vector Control District to study *Aedes aegypti* resting behavior and diel activity.

Left: Sarah Abusaa, PhD candidate at UC Davis, inspects a possible larval source as part of a yard survey in her study characterizing local microhabitat preferences of *Aedes aegypti* in Madera, CA.

Evaluating Mosquito Microhabitats in the Central Valley, CA

PacVec member, Malak Saleh, an undergraduate from UC Davis, aspirates a resting box as part of a study to understand microhabitat availability and thermal preferences of *Aedes aegypti* mosquitoes in the central valley of California led by UC Davis PhD student and former ACME Trainee Representative Olivia Winokur.

Tick Surveillance in the Southeastern United States

The Southeastern Center of Excellence in Vector-Borne Diseases (SECVBD) led tick surveillance efforts, with 23 dedicated interns spanning 8 states (AL, GA, KY, MO, NC, SC, TN, and VA). Interns were hosted by vector-borne disease experts at the University of Alabama, University of South Carolina, University of North Carolina, Appalachian State University, Tennessee Department of Health, University of Missouri, Georgia Department of Health, Old Dominion University, and the University of Kentucky. Interns received training from host sites and via the SECVBD-sponsored "Tick University" at the TN Department of Health. Interns contributed to surveillance and assessment of tick abundance, distribution, identification, and vouchering. These efforts undergird spatial mapping of tick distribution, and creation of a suite of species distribution models for the region. Host sites are harmonizing tick-borne pathogen testing for ticks collected across the southeastern United States, laying the groundwork for expanded tick and tick-borne disease surveillance.

Collaborating to Contain Virus Outbreaks in Miami, FL

In the second half of 2020, the Miami-Dade Mosquito Control District (MDMCD), the University of Miami, and the greater SECVBD collaborated to provide increased mosquito pool testing in response to the simultaneous circulation of SARS-CoV-2, West Nile, and dengue viruses in Miami, FL. SECVBD trainees Dr. Heather Coatsworth, Dr. Catherine Lippi, Dr. Caroline Stephenson, Dr. Andre Wilke, and Jasmine Ayers supported these efforts. Collaborations coordinated through the SECVBD supported public health responses through strategic vector control. Preprint here: A molecular surveillance-guided vector control response to concurrent dengue and West Nile virus outbreaks in a COVID-19 hotspot of Florida.

Addressing Tick and Tick-borne Disease Issues in Indiana

Members of the Tick INsiders team, Purdue University, IN conducted surveillance for major tick vector species across north, central and southern Indiana. Tick INsiders is a community science project to improve the prevention, diagnosis and treatment of tick-borne diseases in Indiana. Tick drags were performed on public and private lands from early spring through fall. Field collections and specimens received from community scientists were sequenced to assess the bacteria and viruses circulating in Indiana tick populations, detect high consequence pathogens and guide regional public outreach efforts and health care delivery.

Left: Members of the Tick INsiders team, Purdue University (Cate Hill's lab), Ms. Lauren Hagen (MS) and Dr. Maria Murgia, dragging for species of hard ticks in deciduous forest, IN, early spring. Ms. Jasleen Kaur (MS), Tick INsiders, Purdue University, drags for ticks in IN, in early spring (center) and checks a flannel drag sheet for ticks (right).

Dr. Maria Murgia, Senior Scientist, Tick INsiders, Purdue University, processing field collected ticks to support longitudinal and spatial assessment of bacteria and viruses circulating in Indiana tick populations.

Insect Vector Control Product Development, New Natural Product Formulations Against Mosquitoes

At left, Ms. Jasleen Kaur (MS), Purdue University, Vector Biology Program (Cate Hill's lab) sorts anesthetized adult female mosquitoes as part of efficacy studies of plant-derived natural product formulations as new tools for mosquito control. (Center) Teresia Njoroge, PhD, a postdoctoral fellow in Molly Duman Scheel's laboratory at Indiana University School of Medicine, prepares yeast cultures from a strain that expresses short hairpin RNAs targeting conserved sequences in *Aedes*, *Anopheles*, and *Culex* neural genes. Johann Schwarz (right), a premedical student assistant in the lab, prepares media for production of yeast to be used in upcoming semi-field trials. The yeast, which can be heat-inactivated prior to use, can be formulated into a tablet for larval consumption or delivered to adults as an attractive targeted sugar bait. Although the yeast effectively kills mosquitoes, it has not shown any impact on non-target arthropods in laboratory assays.