

EASTERN BRANCH
ENTOMOLOGY SOCIETY OF AMERICA
92ND ANNUAL MEETING



The Bellevue Hotel
Philadelphia, PA
April 24-26, 2022

Program Summary

SUNDAY, APRIL 24, 2022		
Program	Time	Location
Executive Committee Meeting	3:30 PM - 5:00 PM	Red Room
President's Reception	5:00 PM - 7:00 PM	Conservatory (12th Floor)
Presentation Uploads	5:00 PM - 7:00 PM	Ballroom Foyer
This will be the only opportunity for on-site uploads of Student Competition Ten-Minute Papers		
Registration	5:00 PM - 7:00 PM	Ballroom Foyer
MONDAY, APRIL 25, 2022		
Program	Time	Location
Registration	7:30 AM - 10:00 AM	Ballroom Balcony
Exhibitor Setup	7:30 AM - 10:00 AM	Ballroom Balcony
Student Poster Setup	7:30 AM - 10:00 AM	Ballroom Foyer
PhD Ten-Minute Papers	8:00 AM - 11:40 AM	Clover Room
Undergraduate Ten-Minute Papers	8:00 AM - 11:00 AM	State Drawing Room
Diversity in the Academic Ecosystem: How Contributions to Diversity, Equity, and Inclusion Strengthens Collaborations and Connections in Research	8:00 AM - 10:00 AM	Red Room
Masters and PhD Posters	10:00 AM - 6:00 PM	Ballroom Balcony
Undergraduate Posters	10:00 AM - 6:00 PM	Ballroom Balcony
Silent Auction and Exhibitors	10:00 AM - 6:00 PM	Ballroom Balcony
Not All Pests!: Insect Conservation and Ecosystem Function in Urbanized Areas	10:15 AM - 12:00 PM	Red Room
Lunch on Your Own	12:15 PM - 1:30 PM	
Masters Ten-Minute Papers	1:30 PM - 4:40 PM	Clover Room
Advancing Entomological Research through Community Science	1:30 PM - 3:30 PM	Red Room
Emerging Challenges and Opportunities in <i>Helicoverpa zea</i> Management	1:30 PM - 4:30 PM	State Drawing Room
Hemp Pest Management Needs and Challenges	3:45 PM - 5:45 PM	Red Room
ESA Town Hall	6:00 PM - 7:00 PM	Red Room

Student Poster Removal	6:00 PM - 7:00 PM	Ballroom Balcony
Contributed Poster Setup	7:00 PM - 8:00 PM	Ballroom Balcony
Entomology Games	7:00 PM - 9:30 PM	Clover Room
TUESDAY, APRIL 26, 2022		
Program	Time	Location
Final Business Meeting	7:00 AM - 8:00 AM	Clover Room
Registration	7:30 AM - 12:00 PM	Ballroom Foyer
Biology and Management of Urban and Medically Important Pests	8:00 AM - 9:30 AM	Red Room
Forged in Philly: Tales from the Crossroads of Insects and American History	8:00 AM - 10:00 AM	Clover Room
Contributed Talks	8:00 AM - 12:00 PM	State Drawing Room
Contributed Posters	8:00 AM - 2:00 PM	Ballroom Balcony
Exhibitors	8:00 AM - 2:00 PM	Ballroom Balcony
A Crash Course in Communication: From Enlisting Community Scientists to Engaging Concerned Stakeholders	10:00 AM - 12:15 PM	Red Room
Beneficial or Not, Here They Come: Biological Traits of Recently Expanding Insect Populations	10:15 AM - 12:00 PM	Clover Room
Plenary and Awards Luncheon	12:15 PM - 1:45 PM	Grand Ballroom
Current Issues in Agricultural Pest Management	2:00 PM - 4:45 PM	State Drawing Room
Early Career Professionals Adapting and Achieving across Disciplines	2:00 PM - 4:20 PM	Red Room
Trials of the Insecticidal Peptide Kind: Recent Experiences with the Newest Neuromuscular Mode of Action, IRAC Group 32, GS-omega/kappa-Hxtx-Hv1a	2:00 PM - 4:05 PM	Clover Room
Contributed Poster Removal	2:00 PM - 3:00 PM	Ballroom Balcony

Code Of Conduct

By attending the 2022 Eastern Branch Meeting, you agree voluntarily to abide by our ethics policy. The full policy may be found online at entsoc.org/conduct. If you need to file a complaint, please contact Stacie East, ESA's Director of Diversity, Equity, and Inclusion at +1 (301) 731-4535 x3030 or seast@entsoc.org

Current COVID-19 Guidelines for Philadelphia

Beginning on April 18, 2022, masks will be required in indoor public spaces. Proof of vaccination is not currently required, but may exist at individual businesses; patrons should check with each business individually to know what to expect. Our expectation is that we will all practice protocols that reflect this “spirit of respect and care” for our community throughout the event. The Eastern Branch Executive Committee strongly encourages attendees to wear a well-fitting face mask inside all meeting spaces. Additionally, ESA will have the following supplies available to help stop the spread of COVID-19: face masks, hand sanitizer, and sanitizing wipes.

If you are sick, please stay home and contact us at esa@entsoc.org.

Special thanks to our 2022 sponsors!



WELCOME TO THE 92ND MEETING OF THE EASTERN BRANCH, ESA!

After cancelling in 2020, and being virtual in 2021, we struggled yet ultimately succeeded in holding this in-person meeting for 2022. Nevertheless, please be smart and safe while the pandemic continues.

The last year began a transformation within the Branch. Starting officially back in 1929, the goal of the Branch was to advance the discipline of entomology “in all its phases,” even though its affiliation was with the American Association of Economic Entomologists. Communication of science was the focus, although today’s Branch also plays an active role in the growth of new scientists, as evidenced by the strong showing of students at this meeting. Branch activities since its beginnings have centered on the annual meeting, where groups of entomologists with similar interests gathered to share new findings and long-learned wisdom.

To reach beyond the annual meeting format, this year we initiated new ways to collaborate and connect:

- A weekend meeting in September for students and professionals to interact informally
- A webinar series reflecting entomological science within our region and targeted to our members
- Behind-the-scenes tours of entomological facilities in the region

With the help of many volunteers, these activities are being offered to serve our members to advance our profession within the Eastern Branch. Please join us to help achieve our goal.



Bill Lamp

Eastern Branch President



Kelli Hoover

The L. O. Howard Distinguished Achievement Award was established by the Eastern Branch of the Entomological Society of America in 1974 to recognize scientists who have made significant contributions in the field of entomology.

L.O. HOWARD DISTINGUISHED ACHIEVEMENT AWARD

Dr. Kelli Hoover, Professor of Entomology at Pennsylvania State University, is a member of the Centers for Chemical Ecology, Pollinator Research, and Insect Biodiversity. She is internationally recognized for her research on invasive species biology and ecology, especially for the discovery of mechanisms underlying multitrophic interactions between host plants, insects, and insect pathogens or symbionts. She is currently investigating the physiological impacts of spotted lanternfly (SLF) on hardwood trees and population dynamics of SLF satellite populations in Pennsylvania. Her most recent research explores toxin sequestration by SLF from tree of heaven and how this affects predator-prey interactions by birds and arthropods.

Dr. Hoover was elected as an ESA Fellow in Research in 2021, and she received the Black Award from the College of Agricultural Sciences for Excellence in Research in 2020 and two teaching awards in 2014. She has trained over 30 graduate students and postdoctoral fellows, published over 120 peer reviewed papers and book chapters (5 in *PNAS* and 1 in *Science*), and holds two patents. Dr. Hoover has been a member of ESA since 1996 and served as a judge or moderator for student competitions at 11 national meetings and several Eastern Branch meetings. She has organized numerous symposia for ESA meetings and served as a subject editor for *Environmental Entomology*. She served as Chair or Co-chair of the Organizing Committees for 3 annual meetings of the International Society for Invertebrate Pathology and was Treasurer for 4 years.



Anne Nielsen

This award recognizes an Eastern Branch member who has made outstanding contributions in Integrated Pest Management.

EASTERN BRANCH AWARD FOR EXCELLENCE IN INTEGRATED PEST MANAGEMENT

Dr. Anne L Nielsen is an Associate Professor and Extension Specialist of Fruit Entomology at Rutgers University. The primary focus of her research is connecting basic insect biology and behavioral ecology to IPM strategies through the study of factors influencing seasonality, host plant associations, and population dynamics. She studies endemic and invasive species, most notably plum curculio, codling moth, brown marmorated stink bug, and spotted lanternfly, as well as their biological control agents. Her extension program focuses on translating diverse ideas generated from stakeholders into on-farm research that has been broadly adopted within the state. Anne completed her BS degree at Virginia Tech where she was first exposed to the study of entomology. She completed her PhD at Rutgers University studying the life history of brown marmorated stink bug and then moved to UC Davis for a post-doc on entomopathogenic nematode behavior. Afterwards, she started at Michigan State University for a post-doc on organic pest management where she learned the value of on-farm research. Anne has been active in ESA throughout her 15+ year membership, including Chair of Student Affairs Committee, Awards Committee, and a member of the Diversity & Inclusion Committee. She serves as a Subject Editor and Editorial Board member for *Journal of Economic Entomology*. In the Eastern Branch she has served two terms as program chair and recently completed a term as President. She integrates her love of insects, agriculture, and promoting science into most of her service activities within her community, especially those engaging young learners.



Daniel Gruner

This award recognizes an Eastern Branch member for outstanding contributions in teaching.

EASTERN BRANCH DISTINGUISHED ACHIEVEMENT AWARD IN TEACHING

Dr. Daniel Gruner is an Associate Professor in Entomology at the University of Maryland. Dan earned his A.B. in biology at Hamilton College and his Ph.D. in Zoology with an Ecology and Evolution specialization from the University of Hawai'i at Mānoa. Dan's research spans basic to applied dimensions of community ecology, global change, island biology, forest entomology, and biological control of invasive species. He has published in top ecology, entomology, and multidisciplinary journals such as *Science*, *Nature*, *P.N.A.S.*, and *Ecology Letters*. He was recognized by Clarivate Analytics as a Highly Cited Researcher in 2018. Dan uses an inclusive, active learning approach towards teaching undergraduate ecology, graduate insect ecology, and graduate seminars to introduce and apply R software for computation and analysis. In 2021, undergraduate ecology students collected data on the emergence of Brood X periodical cicadas, an effort picked up by more than two dozen TV, radio, print, and online media stories in six countries. Dan served for three years as a rotating Program Officer with the Division of Environmental Biology at the National Science Foundation, where he managed merit review and grant portfolios with the Population & Community Ecology Cluster, Macrosystems Biology, and other programs. He serves currently as subject matter editor for *Ecology* and *Ecological Monographs* and has reviewed manuscripts for at least 53 journals. Dan has served as Program Chair with the ESA Eastern Branch, helping to plan the 2017 and 2018 annual meetings in Newport, RI and Annapolis, MD.



Karin Burghardt

This award honors a student transition or early professional working within the field of entomology who has demonstrated excellence in all the major aspects of intellectual life, including research, extension, teaching and outreach. The candidate will have made outstanding contributions to entomology, shown commitment to extension or outreach, and excelled in entomological education.

EXCELLENCE IN EARLY CAREER AWARD

Dr. Karin T. Burghardt is an Assistant Professor in the Entomology Department at the University of Maryland College Park and a Research Associate at the Smithsonian Environmental Research Center. Trained as a community ecologist, her lab's research program focuses on understanding the basic ecological principles shaping plant-insect interactions in human-modified landscapes such as suburban yards, urban greenspaces, and managed forests. The empirical results of this research program form the backbone of the lab's Extension program which targets the establishment of evidenced-based, best practices for urban and suburban green space care. The goal is to promote activities that allow humans to share space with a variety of native flora and fauna and maintain vital ecosystem functions. Clientele include residents, NGOs, and governmental organizations and include partnerships with existing UME Master Gardener, Woodland Stewardship, and 4H forestry club programs. Her teaching program centers around drawing upper-level undergraduates into the world of plant-insect interactions from two diverse entry points. Animal-Plant Interactions reinforces basic principles of ecology and evolution and explores the generation and maintenance of biodiversity, while Insect Pests of Ornamentals and Turf, focuses on the applied use of ecological theory to manage pest insect species. She is an active civic participant through both urban forestry initiatives and municipal committee work such as being a member of the University Park Trees, Park, and Environment Committee. Past Eastern Branch meetings were the location of many formative career events such as her first academic talk as an undergraduate (2006) and first invited talk in a symposium (2009). Now back at home in an Entomology Department, she looks forward to becoming more involved in EB society activities. Karin received her M.S. and PhD in Ecology and Evolutionary Biology from Yale University working with Dr. Oswald Schmitz on herbivore-induced defenses in goldenrod plants. Prior to that she received a B.S. from the University of Delaware in 2007 working with Dr. Douglas Tallamy on the role of non-native plants in ecosystems.



Jared Dyer

The Eastern Branch of the Entomological Society of America recognizes an outstanding master's level graduate student each year through the presentation of the Asa Fitch Memorial Award.

ASA FITCH MEMORIAL GRADUATE STUDENT AWARD

Jared Dyer is a recent graduate of Virginia Tech where he was advised by Drs. J. Christopher Bergh and Tracy C. Leskey. During his master's program at Virginia Tech, Jared studied the samurai wasp (*Trissolcus japonicus*), an egg parasitoid of the invasive brown marmorated stink bug (*Halyomorpha halys*). His research utilized knowledge of the samurai wasp's foraging ecology to develop optimized sampling methods and improve the surveillance capabilities of adventive populations. Jared also holds a B.S. in Zoology from Kent State University. While his undergraduate studies initially focused on vertebrates, Jared quickly fell in love with the insect world when he started volunteering in the lab of Dr. Ferenc de Szalay, sorting and identifying freshwater macroinvertebrates. Jared is also passionate about science communication and storytelling, and has appeared on the New Hampshire Public Radio podcast *Outside/In*. Jared now works as an Entomology Educator with Cornell Cooperative Extension of Suffolk County in Riverhead, NY.



Maggie Lewis

The John Henry Comstock Graduate Student award is sponsored by ESA and is given to an outstanding graduate student from each Branch of the ESA.

EASTERN BRANCH JOHN HENRY COMSTOCK AWARD

Dr. Maggie Lewis received her Ph.D. in entomology from the University of Maryland under the supervision of Dr. Kelly Hamby. She previously completed her bachelor's degree in molecular environmental biology at the University of California – Berkeley, and her MS in entomology with Dr. Shelby Fleisher at the Pennsylvania State University. Throughout her graduate career, Maggie has worked to advance integrated pest management in a variety of fruit and vegetable cropping systems. Her dissertation research broadly focused on applying knowledge of the ecology and behavior of spotted-wing drosophila for more sustainable management, with a particular emphasis on its interactions with yeast and hyphal fungal microbes. In addition to her graduate research, Maggie actively participated in outreach to growers and other stakeholders by writing extension publications and delivering presentations at field days and winter meetings. As a PhD student, she mentored twelve undergraduate student researchers and authored multiple peer reviewed publications. Maggie currently works as an NSF postdoctoral fellow at the Ohio State University, where her current research aims to understand how abiotic stressors impact host plant resistance in soybeans.

Program Presentations by Day

Sunday, April 24th, 2022

3:30 – 5:00 PM Executive Committee Meeting - Red Room

5:00 – 7:00 PM Registration & Presentation Uploads - Ballroom Foyer

This will be the only opportunity for on-site uploads of Student Competition Ten-Minute Papers

5:00 – 7:00 PM President's Reception - Conservatory (12th Floor)

Monday, April 25, 2022, Morning

7:30 AM – 4:00 PM Registration - Ballroom Foyer

7:30 – 10:00 AM Exhibitor & Student Poster Set Up - Ballroom Balcony

PhD Ten-Minute Papers - Clover Room (Monday AM)

- 8:00 AM Welcoming remarks. Moderator: David R. Owens, Univ. of Delaware, Georgetown, DE
- 8:12 AM *Metarhizium robertsii* is a multifunctional insect pathogen and plant growth promoter. **Huiyu Sheng** (hysheng@umd.edu) and Raymond J. St. Leger, Univ. of Maryland, College Park, MD
- 8:24 AM Can we detect an effect on hemlock tree health from *Laricobius nigrinus* predation of *Adelges tsugae*? **Carrie Preston** (cep19@vt.edu), John Seiler and Scott Salom, Virginia Tech, Blacksburg, VA
- 8:36 AM Hidden in plain site: *Varroa destructor* aggregates on adult drones of *Apis mellifera*. **Zachary Lamas** (zlamas@umd.edu), Univ. of Maryland, College Park, MD
- 8:48 AM The effect of glyphosate exposure on honey bee foraging and recruitment behavior. **Laura McHenry** (mchenryl@vt.edu), Roger Schurch, Bradley Ohlinger and Margaret Couvillon, Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 9:00 AM Waggle dancing bees communicate sustained forage availability in a mixed-use landscape in Virginia. **Bradley Ohlinger** (bdo@vt.edu), Roger Schurch and Margaret Couvillon, Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 9:12 AM The remarkable size variability in U.S. *Varroa destructor* population. **Krisztina Christmon** (kriszch@umd.edu), Univ. of Maryland, College Park, MD
- 9:24 AM Investigating foraging and habitat overlap between *Apis mellifera* and *Megachile rotundata* in Virginia. **Chad Campbell** (chadcc@vt.edu)¹, Roger Schurch¹, Megan O'Rourke², Robert Ostrom¹, Sally Taylor³, Bradley Ohlinger¹ and Margaret Couvillon¹, ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²USDA, Kansas City, MO, ³Virginia Polytechnic Institute and State Univ., Suffolk, VA
- 9:36 AM How do commonly used prophylactic insect management strategies in Maryland seedling corn affect pests, beneficials, and yield? **Maria Cramer** (MariaCramer5610@gmail.com) and Kelly Hamby, Univ. of Maryland, College Park, MD
- 9:48 AM Break

- 10:00 AM Host plants influence fitness of *Lycorma delicatula* nymphal stages. **Katarzyna Madalinska** (kasia.madalinska.05@gmail.com) and Anne Nielsen, Rutgers, The State Univ. of New Jersey, Bridgeton, NJ
- 10:12 AM Impacts of urban land cover on emerald ash borer associated parasitoids. **Timothy Morris** (tmorri04@esf.edu)¹, Juli Gould² and Melissa K. Fierke¹, ¹SUNY College of Environmental Science and Forestry, Syracuse, NY, ²USDA APHIS PPQ S&T Otis Laboratory, Buzzards Bay, MA
- 10:24 AM 5% seed blends are too small and neonicotinoid seed treatments aren't helping. **Kyle Bekelja** (kbekelja@vt.edu)¹, Kathleen Miller², Christian Krupke², Thomas Kuhar¹ and Sally Taylor³, ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Purdue Univ., West Lafayette, IN, ³Virginia Polytechnic Institute and State Univ., Suffolk, VA
- 10:36 AM Reevaluation of squash bug, *Anasa tristis*, thresholds in Virginia summer squash systems. **Sean Boyle** (seanboyle@vt.edu)¹, Thomas Kuhar¹ and Donald Weber², ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²USDA - ARS, Beltsville, MD
- 10:48 AM Differences in plant resources for *Aedes albopictus* and *Culex pipiens* mosquitoes along socioeconomic gradients in Baltimore, MD and Washington, DC. **Sarah Rothman** (rothmans@umd.edu)¹, Shannon LaDeau², Amanda Rockler¹, Hubert Montas¹, Sacoby Wilson¹, Adel Shirmohammadi¹, Victoria Chane¹ and Paul T. Leisnham¹, ¹Univ. of Maryland, College Park, MD, ²Cary Institute of Ecosystem Studies, Millbrook, NY
- 11:00 AM Does exposure to insecticide drift hinder the potential of insectary plants to improve biological control of the Brown marmorated stink bug? **Emma Waltman** (emma.waltman@rutgers.edu) and Anne Nielsen, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 11:12 AM Evaluating the current susceptibility of corn earworm *Helicoverpa zea* (Boddie) populations in Virginia to a range of pyrethroid insecticides using bean dip bioassays. **Kemper Sutton** (klsutton@vt.edu), Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 11:24 AM Investigating behavioral drivers of differential blacklegged tick (*Ixodes scapularis*) burdens on two sympatric rodent species. **Jessica Brown** (jmb7284@psu.edu), Pennsylvania State Univ., Univ. Park, PA

Undergraduate Ten-Minute Papers - State Drawing Room (Monday AM)

- 8:00 AM Welcoming remarks. Moderator: Brenna Traver, Pennsylvania State Univ., Schuylkill Haven, PA
- 8:12 AM Effects of larval stage and host microhabitat on overwintering survival and emergence phenology of *Spathius galinae*, a Russian parasitoid introduced for biocontrol of emerald ash borer (*Agrilus planipennis*) in the US. **Adam Scherr** (ascherr@udel.edu)^{1,2}, Douglas W. Tallamy², Nicole Quinn^{1,3} and Jian Duan¹, ¹USDA-ARS, Newark, DE, ²Univ. of Delaware, Newark, DE, ³Univ. of Massachusetts, Amherst, MA
- 8:24 AM Body size of Staphylinidae unaffected by landscape composition and cropping system in Kenyan push-pull maize system. **Nina Devine** (ngd32@cornell.edu)¹, Tim Luttermoser¹, Zeyaur Khan² and Katja Poveda¹, ¹Cornell Univ., Ithaca, NY, ²International Centre of Insect Physiology and Ecology, Nairobi, Kenya
- 8:36 AM Urban food forest for pollinators: Relationships between berry trees and bees in Syracuse, New York. **Julia Rushton** (jmrushto@esf.edu), Stew Diemont and Melissa K. Fierke, SUNY College of Environmental Science and Forestry, Syracuse, NY
- 8:48 AM Endogenous viral elements in nine publicly available tick genomes. **Miranda Barnes** (miranda.musette.barnes@gmail.com) and Dana Price, Rutgers Univ., New Brunswick, NJ
- 9:00 AM Preserving a threatened cultural keystone species: Predicting black ash occurrence and basket quality through habitat suitability modeling in northern New York. **River Mathieu** (rdmath18@stlawu.edu)^{1,2}, Nathan Siegert², Angello Johnson³, Carol Cady¹, Erika Barthelmess¹ and Aaron Iverson¹, ¹St. Lawrence Univ., Canton, NY, ²USDA - Forest Service, Durham, NH, ³Saint Regis Mohawk Tribe, Akwesasne, NY
- 9:12 AM Effects of provenance on per-floral-unit pollination rates in a Maryland old-field community. **Sophia Gilbert** (srg0100@mcdaniel.edu), Vance Ellis, Kaitlin Murphy and Jessica Wyatt, McDaniel College, Westminster, MD

- 9:24 AM** **Predicting future host plants of the invasive spotted lanternfly (*Lycorma delicatula*) using phylogenetic analysis and DNA barcoding.** *Cameron McPherson* (*cmcpher@terpmail.umd.edu*), Univ. of Maryland, College Park, MD
- 9:36 AM** **Physiological and behavioral mechanisms of age-based host selection in *Halyomorpha halys* (Hemiptera: Pentatomidae).** *Julia Wooby* (*jcw191@scarletmail.rutgers.edu*), Yahel Ben-Zvi, George Hamilton and Chloe Hawkings, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 9:48 AM** **Abundance and seasonality of native bees can give insight to foraging dynamics in an urban environment.** *Marisa Shinal* (*mshinal17@gmail.com*)¹, Isaac Esquivel² and Chloe Hawkings³, ¹Rutgers Univ., New Brunswick, NJ, ²Texas A&M Univ., College Station, TX, ³Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 10:00 AM** **Expression analysis of Fushi Tarazu-Transcription Factor 1 (FTZ-F1) across eusocial insects.** *Liam Ryan* (*lrmr283@scarletmail.rutgers.edu*), Saba Hazaveh and Chloe Hawkings, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 10:12 AM** **(Withdrawn)** Differences in *Pieris rapae* size and wing melanization patterns in habitats adjacent to salt-water and freshwater. *Taylor Camossi* (*tcamossi3137@westfield.ma.edu*)¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA
- 10:24 AM** **How terrain affects cabbage white butterfly (*Pieris rapae*) wing traits.** *Pratima Kafley* (*pkafley5098@westfield.ma.edu*)¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA
- 10:36 AM** **Caste-based gene expression analysis in the red harvester ant, *Pogonomyrmex barbatus*.** *Eliyashaib James* (*ej268@scarletmail.rutgers.edu*)¹ and Chloe Hawkings², ¹Rutgers, The State Univ. of New Jersey, New Brunswick, NJ, ²Rutgers Univ., New Brunswick, NJ

Diversity in the Academic Ecosystem: How Contributions to Diversity, Equity, and Inclusion Strengthens Collaborations and Connections in Research - Red Room (Monday AM)

- 8:00 AM** **Welcoming Remarks.** Moderator and Organizers: Chloe Hawkings, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ; Cesar Rodriguez-Saona, Rutgers, The State Univ. of New Jersey, Chatsworth, NJ and Grayson Tung, Rutgers Univ., New Brunswick, NJ
- 8:02 AM** **From Brazil to the US: My journey as an international student.** *Patricia Prade* (*patriciaprade@gmail.com*), Rutgers Univ., New Brunswick, NJ
- 8:17 AM** **Entomologists of Color: Why Diversity Matters in Entomology.** *Manpreet Kohli* (*mkk24@njit.edu*)¹, Aaron Goodman², Dominic Evangelista³, Lauren Esposito⁴, Megan Wilson¹, Melissa Sanchez Herrera¹, Michelle Samuel-Foo⁵, Jessica Ware¹ and Sallqa-Tuwa BondocGawa Mafla⁶, ¹Rutgers, The State Univ. of New Jersey, Newark, NJ, ²American Museum of Natural History, New York, NY, ³Muséum National d'Histoire Naturelle, Paris, France, ⁴California Academy of Sciences, San Francisco, CA, ⁵Alabama State Univ., Montgomery, AL, ⁶Rutgers Univ., Newark, NJ
- 8:32 AM** **LGBT Inclusion in Undergraduate Entomological Spaces.** *Toviah Bass* (*ttb49@scarletmail.rutgers.edu*) and Iovita Redmond, Rutgers Univ., New Brunswick, NJ
- 8:47 AM** **Break**
- 8:55 AM** **Diversity Statements: What, Why, and How?** *Margarita M. Lopez-Urbe* (*mml64@psu.edu*), Penn State Univ., State College, PA
- 9:10 AM** **Entomology for Everyone: Creating Inclusive Environments in Undergraduate Courses.** *Chloe Hawkings* (*c.hawkings@rutgers.edu*) and Marisa Shinal, Rutgers Univ., New Brunswick, NJ
- 9:25 AM** **If We Are Already Inside, We Can Hold the Door Open for Someone Else.** *Jaime Pinero* (*jpinero@umass.edu*)¹ and Clement Akotsen-Mensah², ¹Univ. of Massachusetts, Amherst, MA, ²Auburn Univ., Auburn, AL

9:40 AM **Working With Underserved Communities in West Virginia: The Patriot Guardens Project.** *Tracy Leskey* (tracy.leskey@usda.gov)¹, *Chris Dardick*², *Douglas Raines*³ and *Melissa Stewart*⁴, ¹USDA-ARS, Kearneysville, WV, ²USDA - ARS, Kearneysville, WV, ³Appalachian Fruit Research Station, USDA-ARS, Kearneysville, WV, ⁴Patriot Guardens WV, Charleston, WV

9:55 AM **Concluding Remarks**

Not All Pests!: Insect Conservation and Ecosystem Function in Urbanized Areas - Red Room (Monday AM)

10:15 AM **Introductory remarks. Organizers:** Lauren Schmitt, Univ. of Maryland, College Park, MD and Karin Burghardt, Univ. of Maryland, College Park, MD

10:20 AM **Urbanization and Insect Life Cycles: Challenges and Opportunities for Non-Pest Insects.** *Lauren Schmitt* (lschmitt@umd.edu) and *Karin Burghardt*, Univ. of Maryland, College Park, MD

10:35 AM **Multi-Scale Drivers of Insect Diversity in Los Angeles.** *Benjamin Adams* (benjamin_adams@gwu.edu)¹ and *Brian V. Brown*², ¹George Washington Univ., Washington, DC, ²Natural History Museum of Los Angeles County, Los Angeles, CA

10:50 AM **Cascading Consequences of an Urban Ecosystem Service: The Urban Ant Feeding Syndrome in North American Cities.** *Amy Savage* (amy.savage@rutgers.edu)¹, *Melissa Carpenter*², *Clint Penick*³, *Sean Menke*⁴, *DeAnna Beasley*⁵ and *Robert Dunn*⁶, ¹Rutgers, The State Univ. of New Jersey, Camden, NJ, ²Drexel Univ., Philadelphia, PA, ³Kennesaw State Univ., Kennesaw, GA, ⁴Univ. of California, La Jolla, CA, ⁵Univ. of Tennessee at Chattanooga, Chattanooga, TN, ⁶North Carolina State Univ., Raleigh, NC

11:05 AM **Spotted Lanternfly Honeydew as a Food Source to Local Hymenoptera Communities.** *Stefani Cannon* (stefani.cannon@temple.edu) and *Matthew Helmus*, Temple Univ., Philadelphia, PA

11:20 AM **Urbanization and Invasion Influence Organic Matter Inputs and Decay in Temperate Forests.** *Tara Trammell* (ttram@udel.edu), *Carl Rosier* and *Noah Totstine*, Univ. of Delaware, Newark, DE

11:35 AM **Assessing the Impacts of Leaf Litter Management on Overwintering insects in Urban and Rural Areas.** *Max Ferlauto* (ferlauto@umd.edu)¹, *John Parker*² and *Karin Burghardt*¹, ¹Univ. of Maryland, College Park, MD, ²Smithsonian Environmental Research Center, Edgewater, MD

11:50 AM **Discussion**

Monday, April 25, 2022, Afternoon

Masters Ten-Minute Papers - Clover Room (Monday PM)

1:30 PM **Welcoming remarks.** Moderator: Brenna Traver, Pennsylvania State Univ., Schuylkill Haven, PA

1:40 PM **Tree species diversity influences periodical cicada oviposition.** *Kristin Jayd* (kjayd@terpmail.umd.edu), Univ. of Maryland, College Park, MD

1:50 PM **Moth community composition in urbanized landscapes.** *Aaron Hunt* (ashunt@udel.edu), Univ. of Delaware, Chestnut Hill, MA

2:00 PM **Management impacts on beneficial insects and secondary pests under mating disruption.** *Jake Newcombe* (jdn66@scarletmail.rutgers.edu)¹ and *Anne Nielsen*², ¹Rutgers Univ., Burlington, NJ, ²Rutgers, The State Univ. of New Jersey, Bridgeton, NJ

- 2:10 PM Impact of water stress on the establishment and persistence of endophytic and entomopathogenic *Metarhizium robertsii*. **Hannah Peterson** (hrp38@psu.edu)¹ and Mary Barbercheck², ¹Pennsylvania State Univ., State College, PA, ²Pennsylvania State Univ., Univ. Park, PA
- 2:20 PM Dragonflies as potential biological control on farms: prey assessment using a DNA approach. **Margaret Hartman** (mehartma@umd.edu) and William Lamp, Univ. of Maryland, College Park, MD
- 2:30 PM Verifying honey bees as bioindicators of native bee health. **Robert Ostrom** (robertostrom@vt.edu)¹, Margaret Couvillon¹, Chad Campbell¹, Bradley Ohlinger¹, Sally Taylor², Sean Malone³, Megan O'Rourke⁴ and Roger Schurch¹, ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Suffolk, VA, ³Virginia Tech Univ., Painter, VA, ⁴National Institute of Food and Agriculture, Kansas City, MO
- 2:40 PM Social-ecological effects on mosquito populations across land use in Bangor, Maine. **Megan Schierer** (megan.schierer@maine.edu), Allison Gardner and Sandra De Urioste-Stone, Univ. of Maine, Orono, ME
- 2:50 PM Impacts of seed coat treatments on insect damage and natural enemy community composition. **Brendan Randall** (brandall@umd.edu)¹, Kim Komatsu², John Parker², Kelsey McGurrian¹, Sarah Alley² and Karin Burghardt^{1,2}, ¹Univ. of Maryland, College Park, MD, ²Smithsonian Environmental Research Center, Edgewater, MD
- 3:00 PM Break
- 3:10 PM Developmental and mortality rate of spotted lanternfly (Hemiptera: Fulgoridae) on grapevines and tree of heaven. **Erica Laveaga** (eul19@psu.edu)¹ and Flor E. Acevedo², ¹The Pennsylvania State Univ., Univ. Park, PA, ²Pennsylvania State Univ., Univ. Park, PA
- 3:20 PM Socioecological variables that predict successful resident-led gravid *Aedes* deployment for mosquito nuisance-biting and vector control. **Aubrey Tingle** (atingler@umd.edu)¹ and Paul T. Leisnham², ¹Univ. of Maryland, Baltimore, MD, ²Univ. of Maryland, College Park, MD
- 3:30 PM Promiscuous queen bees: Challenging the assumption of monogamy in the common eastern bumblebee (*Bombus impatiens*). **Sydney A. Bird** (sbird@colgate.edu)¹, Nathaniel S. Pope¹, Carley M. McGrady¹, Shelby J. Fleischer¹ and Margarita M. Lopez-Urbe², ¹Penn State Univ., Univ. Park, PA, ²Penn State Univ., State College, PA
- 3:40 PM Management of overwintering spotted lanternfly (*Lycorma delicatula*) egg masses with the entomopathogenic fungus, *Beauveria bassiana* GHA. **Jason Bielski** (jbiel654@vt.edu), Douglas Pfeiffer and Stefan Jaronski, Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 3:50 PM Comparison of the feeding damage potential between two Heteropteran pests of edamame (vegetable soybeans). **Daniel Wilczek** (hwilczek@vt.edu)¹ and Thomas Kuhar², ¹Virginia Tech, Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 4:00 PM Assessing the effects of volatile repellents on the invasive spotted lanternfly, *Lycorma delicatula* (White). **Brian Ruether** (brianfr@vt.edu)¹, Lander Comhaire¹, Laura Nixon², Tracy Leskey² and Dorothea Tholl¹, ¹Virginia Tech, Blacksburg, VA, ²USDA - ARS, Kearneysville, WV
- 4:10 PM Progress in developing a perennial living mulch system for Mid-Atlantic cantaloupe growers. **Demian Nunez** (dem1316@hotmail.com), Karin Burghardt, Macarena Farcu and Cerruti Hooks, Univ. of Maryland, College Park, MD
- 4:20 PM Capturing pumpkin pollination: Is a picture worth a thousand words? **Courtney Walls** (courw97@vt.edu)¹, James Wilson², Thomas Kuhar³ and T'ai Roulston⁴, ¹Virginia Tech, Blacksburg, VA, ²Virginia Tech Univ., Blacksburg, VA, ³Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ⁴Univ. of Virginia, Boyce, VA

Advancing Entomological Research through Community Science - Red Room (Monday PM)

- 1:30 PM** **Introductory remarks.** Organizers: Allison Gardner, Univ. of Maine, Orono, ME and Elissa Ballman, Univ. of Maine, Orono, ME
- 1:35 PM** **The Maine Forest Tick Survey: A Community Science Approach to Land Management and Ticks.** *Elissa Ballman* (elissa.ballman@maine.edu)¹, Allison Gardner¹, Jessica Leahy¹ and Carly Sponarski², ¹Univ. of Maine, Orono, ME, ²Canada Forest Service, Edmonton, AB, Canada
- 1:55 PM** **National Moth Week: A decade of engaging the public in community science.** *Elena Tartaglia* (elena.tartaglia@gmail.com)¹, Liti Haramarty², David Moskowitz³ and Jacob Gorneau⁴, ¹Bergen Community College, Paramus, NJ, ²Rutgers, The State Univ. of New Jersey, New Brunswick, NJ, ³EcolScience, Inc., Rockaway, NJ, ⁴California Academy of Sciences, San Francisco, CA
- 2:15 PM** **The New York State Tick Blitz: Harnessing Community Based Science to Understand Range Expansion of Ticks.** *Nicole Foley* (nf276@cornell.edu)¹, Siddhi Balamurali¹, Jody Gangloff-Kaufmann², Joellen Lampman³ and Laura Harrington¹, ¹Cornell Univ., Ithaca, NY, ²Cornell Univ., Farmingdale, NY, ³New York State IPM, Albany, NY
- 2:35 PM** **Master Gardener Bee Monitoring Program.** *Nash Turley* (nqt5263@psu.edu) and Margarita M. Lopez-Uribe, Penn State Univ., State College, PA
- 2:55 PM** **The Dragonfly Mercury Project: Connecting People to Place in Remote and Urban Settings while Informing Mercury Risk at Local to National Scales.** *Sarah Nelson* (snelson@outdoors.org)¹, Kate Buckman², Celia Chen², Collin Eagles-Smith³, Colleen Emery³, Colleen Flanagan Pritz⁴, Katherine Ko⁴, Nate Schumacher⁵ and James Willacker³, ¹Appalachian Mountain Club, Gorham, NH, ²Dartmouth College, Hanover, NH, ³U.S. Geological Survey, Corvallis, OR, ⁴National Park Service, Denver, CO, ⁵Appalachian Mountain Club, Boston, MA
- 3:15 PM** **Panel discussion**

Emerging Challenges and Opportunities in *Helicoverpa zea* Management - State Drawing Room (Monday PM)

- 1:30 PM** **Welcoming remarks.** Organizers: Kelly Hamby, Univ. of Maryland, College Park, MD and Michael Crossley, Univ. of Delaware, Newark, DE
- 1:35 PM** **Using Sentinel *Bt* sweet Corn to Monitor Resistance to *Bt* Toxins.** *Galen Dively* (galen@umd.edu), Univ. of Maryland, College Park, MD
- 1:55 PM** **Genomic Resistance Monitoring in *Helicoverpa zea* Following the Release of Transgenic Crops.** *Katherine Taylor* (taylorlk@umd.edu)¹, Kelly Hamby¹, Fred Gould² and Megan Fritz¹, ¹Univ. of Maryland, College Park, MD, ²North Carolina State Univ., Raleigh, NC
- 2:15 PM** **Leveraging *Helicoverpa zea* Trap Data to Understand Linkages Between Overwintering Ecology and Population Dynamics.** *Anders Huseeth* (ashuseeth@ncsu.edu)¹, Douglas Lawton¹, Dominic Reisig², Seth Dorman³, Amy Morey⁴, William Hutchison⁴, DeShae Dillard¹, Robert Venette⁵, George Kennedy¹ and Russell Groves⁶, ¹North Carolina State Univ., Raleigh, NC, ²North Carolina State Univ., Plymouth, NC, ³National Forage Seed Production Research Center-USDA-ARS, Corvallis, OR, ⁴Univ. of Minnesota, St. Paul, MN, ⁵USDA - Forest Service, St. Paul, MN, ⁶Univ. of Wisconsin, Madison, WI
- 2:35 PM** **Squeezing Insecticide Efficiencies Out of Limited Options for Corn Earworm in Sweet Corn.** *David R. Owens* (dowen123@vt.edu), Joseph Deidesheimer, Dylan Wilkerson, Cody Stubbs and Samantha Cotten, Univ. of Delaware, Georgetown, DE
- 2:55 PM** **Break**
- 3:10 PM** **Effect of Cover Crops and Reducing Tillage on Damage from Corn Earworm and Other Lepidoptera in Organic Corn Systems.** *Karly Reagan* (kjr5470@psu.edu)¹, Christina Voortman², John Wallace² and Mary Barbercheck², ¹Pennsylvania State Univ., Chambersburg, PA, ²Pennsylvania State Univ., Univ. Park, PA

- 3:30 PM **Breeding Sweet Corn for *Helicoverpa zea* Resistance and Applications in Organic Production Systems.** *Virginia Moore* (vm377@cornell.edu)¹ and William Tracy², ¹Cornell Univ., Ithaca, NY, ²Univ. of Wisconsin, Madison, WI
- 3:50 PM **The Corn Earworm Challenge in Hemp.** *Thomas Kuhar* (tkuhar@vt.edu)¹, Kadie Britt² and Helene Doughty³, ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Univ. of California Riverside, Riverside, CA, ³Virginia Polytechnic Institute and State Univ., Painter, VA
- 4:10 PM Discussion

Hemp Pest Management Needs and Challenges - Red Room (Monday PM)

- 3:45 PM **Welcoming Remarks.** Organizers: Simon Zebelo, Univ. of Maryland Eastern Shore, Princess Anne, MD; Scott Lewins, Univ. of Vermont, Burlington, VT and Heather Darby, Univ. of Vermont, St Albans, VT
- 3:50 PM **Present Status on Hemp Russet Mite as a Cannabis Pest and its Management..** *Whitney Cranshaw* (whitney.cranshaw@colostate.edu)¹, Punya Nachappa¹ and Chris Hayes², ¹Colorado State Univ., Fort Collins, CO, ²Colorado state university, Fort Collins, CO
- 4:05 PM **Observations of Delaware hemp pests.** *David Owens* and *Joseph Deidesheimer* (deidesh@udel.edu), Univ. of Delaware, Georgetown, DE
- 4:20 PM **Pest Management Challenges and Needs in Southeastern Hemp.** *Katelyn Kesheimer* (kak0083@auburn.edu)¹, Kyle Owsley² and Jeremy Pickens², ¹Auburn Univ., Auburn, AL, ²Auburn Univ., Mobile, AL
- 4:35 PM **Cultural Practices to Consider in the Management of Insect Pests of Hemp.** *Heather Darby* (heather.darby@uvm.edu)¹ and **Scott Lewins**², ¹Univ. of Vermont, St Albans, VT, ²Univ. of Vermont, Burlington, VT
- 4:50 PM Break
- 5:00 PM **Arthropod Pest Management in Hemp.** *Kadie Britt* (kadieb@ucr.edu)¹, Thomas Kuhar², Helene Doughty³ and Houston Wilson⁴, ¹Univ. of California, Riverside, Parlier, CA, ²Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ³Virginia Polytechnic Institute and State Univ., Painter, VA, ⁴Univ. of California, Riverside, CA
- 5:15 PM **Hemp Pest Management Needs and Challenges in Maryland Eastern Shore.** *Simon Zebelo* (sazebelo@umes.edu), Univ. of Maryland Eastern Shore, Princess Anne, MD
- 5:30 PM **How hemp research is being put to work.** *Suzanne Wainwright*, Buglady Consulting, Slatington, PA.
- 5:45 PM **Concluding Remarks**

Masters and PhD Posters - Ballroom Balcony (Monday 10:00 AM-6:00 PM)

- DSP1 **Can mating disruption be the answer for diamondback moth management?** *Taylor Sydney* (tsydnor5@vt.edu)¹, Thomas Kuhar¹, Alejandro Del Pozo², Brent Short³ and Elidah Hopkins², ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Virginia Beach, VA, ³Trécé Inc., Adair, OK
- DSP2 **Determining feeding potential of the red headed flea beetle on ornamentals in Virginia nurseries.** *Eleanor Lane* (elliell@vt.edu)¹ and Alejandro Del Pozo², ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Virginia Beach, VA
- DSP3 **Evaluating metagenetic eDNA techniques for characterization of floral-associated arthropod communities.** *Grace Avalos* (grace.avalos@umces.edu)¹, Regina Trott¹, John Ballas², Chia-Hua Lin², Clayton Raines³, Deborah Iwanowicz³, Karen Goodell⁴ and Rodney Richardson¹, ¹Univ. of Maryland Center for Environmental Science,

Frostburg, MD, ²The Ohio State Univ., Columbus, OH, ³Leetown Research Laboratory, Kearneysville, WV, ⁴The Ohio State Univ., Newark, OH

- DSP4 Recovery of introduced biological control agents of emerald ash borer (*Agrilus plannipenis*) in Maryland. **Angela S. Saenz** (ansaenz@umd.edu) and Daniel Gruner, Univ. of Maryland, College Park, MD
- DSP5 A Citizen Science insect egg hunt to elucidate the biology and ecology of *Halyomorpha halys* egg parasitoids. **Madeline Potter** (mpotter@terpmail.umd.edu) and Paula M. Shrewsbury, Univ. of Maryland, College Park, MD
- DSP6 Biogeographical patterns in competitor-enemy interactions suggest release from apparent competition in a range-expanding host. **Rachel Chen** (rchen78@binghamton.edu), Dylan Jones, Aly Milks, Thomas Powell and Kirsten Prior, Binghamton Univ., State Univ. of New York, Binghamton, NY
- DSP7 Managing agricultural drainage ditches to improve conservation biological control. **Shellyann Henry** (sshenny@umes.edu), Univ. of Maryland, Eastern Shore, Princess Anne, MD
- DSP8 Insect pollinator communities of Maryland's endangered serpentine grasslands. **Justin O'Neill** (joneill8@umd.edu) and Anahi Espindola, Univ. of Maryland, College Park, MD
- DSP9 The benefits of cross-pollination in edamame soybean vegetable. **Kathleen Evans** (kciola@terpmail.umd.edu)¹ and Anahi Espindola², ¹Univ. of Maryland, College Park,, MD, ²Univ. of Maryland, College Park, MD
- DSP10 Uncovering variation in thermal tolerance in species complex (*Aphaenogaster* sp.) of seed-dispersing ants along environmental gradients. **Rosebelle Ines** (rines1@binghamton.edu), Gabriella Quartuccia, William Smisko, Kathryn Gauthier, Thomas Powell and Kirsten Prior, Binghamton Univ., State Univ. of New York, Binghamton, NY

Undergraduate Posters - Ballroom Balcony (Monday 10:00 AM-6:00 PM)

- DSP12 Using molecular gut content analysis to characterize potato leafhopper (*Empoasca fabae*) movement within a farmscape. **Anya Wilkinson** (anya.wilkinson03@gmail.com), Alina Avanesyan and William Lamp, Univ. of Maryland, College Park, MD
- DSP13 Identifying candidate mutations in Aminopeptidase N genes underlying resistance to Bt toxins in *Helicoverpa zea*. **Jane Quackenbush** (jquacken@terpmail.umd.edu), Megan Fritz and Katherine Taylor, Univ. of Maryland, College Park, MD
- DSP14 A comparative study of Bt resistance in *Helicoverpa zea* populations collected from Bt expressing and non-expressing sweet corn in the mid-Atlantic region of North America. **Dominique Desmarattes** (dominique2124@gmail.com)¹, Katherine Taylor², Megan Fritz² and Kelly Hamby², ¹Univ. of Maryland - College Park, College Park, MD, ²Univ. of Maryland, College Park, MD
- DSP15 Effects of light pollution on insect abundance. **Mitchell Sadowski** (mitch.sadow@gmail.com) and Kathryn Weglarz, Westfield State University, Westfield, MA
- DSP16 Testing the ability of environmental growth chambers to replicate outdoor growth conditions using the invasive forest insect *Lymantria dispar* (L.). **Emily Cassady** (emily.cassady@richmond.edu)¹, Hannah Meister¹, Lily Thompson^{1,2}, Jonathan Walter^{1,3} and Kristine Grayson¹, ¹Univ. of Richmond, Richmond, VA, ²Clemson Univ., Clemson, SC, ³Univ. of Virginia, Charlottesville, VA
- DSP17 An analysis of non-tick specimens collected by citizen scientists during active tick surveillance. **Michael Galli** (Michael.g.galli@maine.edu), Elissa Ballman and Allison Gardner, Univ. of Maine, Orono, ME
- DSP18 Assessing the practicality of RIDL genetic modification techniques as a method for controlling mosquito-borne disease. **Anna Bishop** (anna.bishop@maine.edu) and Allison Gardner, Univ. of Maine, Orono, ME
- DSP19 Phenology and distribution of ixodid tick species in southwest Virginia. **Lucas Raymond** (lraymond02@vt.edu), Alexandra Cumbie and Gillian Eastwood, Virginia Polytechnic Institute and State Univ., Blacksburg, VA

- DSP20 A comparative study of Bt resistance in *Helicoverpa zea* populations collected from Bt expressing and non-expressing sweet corn in the mid-Atlantic region of North America. *Dominique Desmarattes* (ddesmara@umd.edu), Katherine Taylor, Megan Fritz and Kelly Hamby, Univ. of Maryland, College Park, MD
- DSP21 Investigating the role of aminopeptidase N genes in *Helicoverpa zea* Bt crystalline toxin resistance. *Olivia Rosen* (orosen1@terpmail.umd.edu), Jane Quackenbush, Katherine Taylor and Megan Fritz, Univ. of Maryland, College Park, MD
- DSP22 Impact of deciduous forest and grassland type habitats on the melanization of the anterior and posterior wing spots in cabbage white butterflies (*Pieris rapae*). *Victoria Reyes* (vreyes8672@westfield.ma.edu)¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA
- DSP23 Impacts of terrain on cabbage white butterfly (*Pieris rapae*) wingspan. *Casey Moore* (cmoore5238@westfield.ma.edu)¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA
- DSP24 Wing apex melanization variation in cabbage white butterflies (*Pieris rapae*): Geographical differences across North American specimens. *Alice Teele* (ateele6421@westfield.ma.edu)¹, Carl Grobe¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA
- DSP25 Variation in cabbage white butterfly wing size across its range. *Erin Levesque* (elevesque5940@westfield.ma.edu)¹ and Kathryn Weglarz², ¹Westfield State Univ., Westfield, MA, ²Westfield State University, Westfield, MA

Tuesday, April 26, 2022, Morning

Biology and Management of Urban and Medically Important Pests - Red Room (Tuesday AM)

- 8:00 AM **Welcoming Remarks.** Moderator and Organizer: Changlu Wang, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 8:05 AM **Patterns of Pest Infestations in Apartment Buildings.** *Changlu Wang* (changluw@rutgers.edu), Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 8:25 AM **Medicare Reimbursement for IPM Services for Disabled Adults in Southeastern Pennsylvania..** *Dion Lemon* (dll33@psu.edu), Penn State Univ., Philadelphia, PA
- 8:45 AM **Neighbors Help Neighbors Control Urban Mosquitoes.** *Dina Fonseca* (dina.fonseca@rutgers.edu), Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 9:05 AM **Practical Implementation of the Fungal Biopesticide Aprehnd for Control of Bed Bug Infestations.** *Nina Jenkins* (nej2@psu.edu), Pennsylvania State Univ., Univ. Park, PA
- 9:25 AM **Concluding Remarks**

Forged in Philly: Tales from the Crossroads of Insects and American History - Clover Room (Tuesday AM)

- 8:00 AM **Welcoming Remarks.** Organizers: Ashley Kennedy, Delaware Dept. of Natural Resources and Environmental Control, Newark, DE; Brenna Traver, Pennsylvania State Univ., Schuylkill Haven, PA and Aditi Dubey, Univ. of Maryland, Queenstown, MD
- 8:03 AM **Flies, Fevers, Philly, and the Founding Fathers: How Insects Shaped Our Nation's Beginning.** *Ashley Kennedy* (achoatekennedy@gmail.com), Delaware Dept. of Natural Resources and Environmental Control, Newark, DE

8:18 AM	The Formation and Evolution of the Eastern Branch Starting in the 1920's: Our Roots in Collaboration and Connection. <i>William Lamp</i> (lamp@umd.edu), Margaret Hartman and Jodi Coalter, Univ. of Maryland, College Park, MD
8:33 AM	Insect Queens: Three Remarkable Women in Entomology. <i>Aditi Dubey</i> (aditid26@gmail.com) ¹ and Gary L. Miller ² , ¹ Univ. of Maryland, Queenstown, MD, ² USDA - ARS, Beltsville, MD
8:48 AM	Break
8:56 AM	Lots of Insects. Wish You Were Here: Cultural Entomology from the Golden Age of Postcards. <i>Gary Miller</i> (gary.miller@usda.gov) ¹ and Melissa Miller ² , ¹ USDA, Beltsville, MD, ² U.S. Army Public Health Command, Fort Meade, MD
9:11 AM	Forged in Philly: Reverend L. L. Langstroth. <i>Brenna Traver</i> (bet12@psu.edu), Pennsylvania State Univ., Schuylkill Haven, PA
9:26 AM	Insects vs Napoleon: How Insect-Vectored Pathogens Changed World History. <i>Michael Skvarla</i> (mxs1578@psu.edu), Pennsylvania State Univ., Univ. Park, PA
9:41 AM	A Cabinet, a Library, a Printing Press, and Devotion to the Study of Insects: Philadelphia's American Entomological Society. <i>Greg Cowper</i> (gwc32@drexel.edu), Academy of Natural Sciences of Drexel Univ., Philadelphia, PA
9:56 AM	Concluding Remarks

A Crash Course in Communication: From Enlisting Community Scientists to Engaging Concerned Stakeholders - Red Room (Tuesday AM)

10:00 AM	Welcoming Remarks. Organizers: Tyler Hagerty, Univ. of Delaware, Newark, DE; Timothy Morris, SUNY College of Environmental Science and Forestry, Syracuse, NY; Katarzyna Madalinska, Rutgers, The State Univ. of New Jersey, Bridgeton, NJ; Hayden Bock, Pennsylvania State Univ., Univ. Park, PA; Tyler Wiedmeyer, Univ. of Delaware, Linthicum Heights, MD; Mika Pagani, Virginia Polytechnic Institute and State Univ., Blacksburg, VA and Madeline Potter, Univ. of Maryland, College Park, MD
10:03 AM	Adapting IPM Practice with Effective Communication. <i>Carrie Denson</i> (cmansue@njaes.rutgers.edu) ¹ and Dean Polk ² , ¹ Rutgers Univ., Mays Landing, NJ, ² Rutgers, The State Univ. of New Jersey, Bridgeton, NJ
10:23 AM	Engaging Stakeholders: Lessons from an Early Career Scientist and Beyond. <i>Matt Boucher</i> (mzb6294@psu.edu), Penn State, Univ. Park, PA
10:43 AM	Engaging Fruit Growers as Collaborators to Increase IPM Adoption. <i>Anne Nielsen</i> (nielsen@njaes.rutgers.edu), Ann Rucker and Dean Polk, Rutgers, The State Univ. of New Jersey, Bridgeton, NJ
11:03 AM	Speaking to Wallflowers: Attempts at Engaging the Audience. <i>Brian Kunkel</i> (bakunkel@udel.edu), Univ. of Delaware, Newark, DE
11:23 AM	Science Communication in Extension: How I Learned to Stop Worrying and Love the Logic Model. <i>Anna Wallingford</i> (anna.wallingford@unh.edu), Univ. of New Hampshire, Durham, NH
11:43 AM	The Hidden Sides of Science Communication. <i>Brian Lovett</i> (Brian.Lovett@mail.wvu.edu), West Virginia Univ., Morgantown, WV

Beneficial or Not, Here They Come: Biological Traits of Recently Expanding Insect Populations - Clover Room (Tuesday AM)

- 10:15 AM** **Introductory Remarks.** Moderators and Organizers: Margarita Lopez-Urbe, Penn State Univ., Univ. Park, PA; Lizzette Cambron, Penn State Univ., Univ. Park, PA; Stephania Sandoval Arango, Pennsylvania State Univ., Univ. Park, PA and Laura Jones, Penn State Univ., Univ. Park, PA
- 10:20 AM** **Invasion of North America by Spotted Lanternfly.** *Kelli Hoover* (kxh25@psu.edu), Pennsylvania State Univ., Univ. Park, PA
- 10:35 AM** **Native Mason Bees Decline in the Wake of Non-Native Mason Bee Introductions.** *Kathryn LeCroy* (kal8d@virginia.edu), Cornell Univ., Ithaca, NY
- 10:50 AM** **Rapid and Repeatable Genetic Changes in the Invasive African Fig Fly, *Zaprionus indianus*.** *Priscilla Erickson* (perickso@richmond.edu), Univ. of Richmond, Univ. of Richmond, VA
- 11:05 AM** **From Very Hungry Caterpillars to Boring Beetles: A Look at the Traits and Factors Driving Impact of Introduced Forest Insects in North America.** *Ashley Schulz* (ash.schulz@msstate.edu), Mississippi State Univ., Mississippi State, MS
- 11:20 AM** **Talking About Invasives - Tips for Engaging with the Public.** *James Kopco* (jkk5873@psu.edu), Penn State Univ., Univ. Park, PA
- 11:35 AM** **Unexpected Consequences of Climate Warming for Insects that Experience Density-dependent Growth.** *Devin Goodman* (goodsmann@ualberta.ca), Los Alamos National Laboratory, Los Alamos, NM
- 11:50 AM** **Invasive Alien Species and Their Effects on Pollinators and Pollination..** *Anahi Espindola* (anahiesp@umd.edu), Univ. of Maryland, College Park, MD
- 12:05 PM** **Concluding Remarks**

Early Career Professionals Adapting and Achieving across Disciplines - Red Room (Tuesday PM)

- 2:00 PM** **Introductory remarks. Moderators and Organizers:** Laura Nixon, USDA - ARS, Kearneysville, WV; Karly Regan, Cornell Univ., Geneva, NY; Amanda Whispell, ., Bethlehem, PA and Manpreet Kohli, American Museum of Natural History, New York, NY
- 2:05 PM** **From Grad to Green: One Person's Experience Launching a Career in the Green Industry During a Global Pandemic.** *Christopher Riley* (criley@Bartlett.com), Bartlett Tree Experts, Charlotte, NC
- 2:20 PM** **The Philadelphia Insectarium and Butterfly Pavilion: We are the Cockroach....** *John Cambridge* (john.cambridge000@gmail.com), Philadelphia Insectarium and Butterfly Pavilion, Philadelphia, PA
- 2:35 PM** **How to Build Relationships with Stakeholders in the Era of Distancing.** *Karly Reagan* (kjr5470@psu.edu), Pennsylvania State Univ., Chambersburg, PA
- 2:50 PM** **Tangential Academia: What Life Looks Like from Inside a Museum Collection.** *Jackson C. Means* (jackson.means@vmnh.virginia.gov), Virginia Museum of Natural History, Martinsville, VA
- 3:05 PM** **Break**
- 3:20 PM** **The Survival Guide of a COVID Post Doc: Losing Mops But Not My Love of Entomology.** *Jessica Kansman* (kansmanj@psu.edu)¹ and Sara Hermann², ¹Univ. of Missouri, Columbia, MO, ²Pennsylvania State Univ., Univ. Park, PA
- 3:35 PM** **A New Lab, New Focus, and Overcoming Pandemic Restrictions.** *Nicholas Larson* (nicholas.larson@ars.usda.gov), USDA - ARS, Beltsville, MD

- 3:50 PM **Crossing Over: The Evolution of an ECP's Career as They Shift Across Disciplines in Entomology (SysEB to P-IE).** *Megan Wilson* (meywilson@yahoo.com)¹, *Veronica Campos*², *Jessica Ware*¹ and *Anne Nielsen*³, ¹Rutgers, The State Univ. of New Jersey, Newark, NJ, ²Rutgers, New Brunswick, NJ, ³Rutgers, The State Univ. of New Jersey, Bridgeton, NJ
- 4:05 PM **Discussion**

Current Issues in Agricultural Pest Management - State Drawing Room (Tuesday PM)

- 2:00 PM **Welcoming Remarks.** Organizers: Sally Taylor, Virginia Polytechnic Institute and State Univ., Suffolk, VA and David Owens, Univ. of Delaware, Georgetown, DE
- 2:05 PM **A Research Update on Relevant Pests for Virginia Nurseries.** *Alejandro Del-Pozo* (adelpozo@vt.edu), Virginia Polytechnic Institute and State Univ., Virginia Beach, VA
- 2:20 PM **Identifying Distribution Patterns of Pests and Predators in Vegetable Crops Using Geostatistical Techniques.** *Lorena Lopez* (lorellopezq257@vt.edu)¹, *Oscar Liburd*² and *Emmanuel Torres*³, ¹Virginia Tech, Painter, VA, ²Univ. of Florida, Gainesville, FL, ³Virginia Tech, Painter,, VA
- 2:35 PM **Progress in the Development of an Insecticide/Miticide/Nematicide Utilizing the Type Strain of *Burkholderia rinojensis*.** *Timothy Johnson* (tjohnson@marronebio.com)¹, *Stephen Bogash*², *Brian Mueller*¹, *Melissa O'Neal*³ and *Maryna Serdani*⁴, ¹Marrone Bio Innovations, Inc, Davis, CA, ²Marrone Bio Innovations, Inc, Harrisburg, PA, ³Marrone Bio Innovations, Davis, CA, ⁴Marrone Bio Innovations, Corvallis, OR
- 2:50 PM **Investigating French Marigold (*Tagetes patula* L.) as an Insectary Plant for Sweet Corn Plantings.** *Demian Nunez* (dnunez1@umd.edu)¹, *Veronica Yurchak*¹, *Scott McCluen*², *Alan Leslie*³ and *Cerruti Hooks*¹, ¹Univ. of Maryland, College Park, MD, ²Univ. of Maryland, College Park, MD, ³Univ. of Maryland, Bel Alton, MD
- 3:05 PM **Population Trends of Corn Earworm in New Jersey.** *Joseph Ingerson-Mahar* (mahar@sebs.rutgers.edu), Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 3:20 PM **Break**
- 3:30 PM **Evaluating the Use of Squash Varieties as Trap Crop of Cucumber Beetles in Watermelon Fields.** *Lenneisha Gilbert* (lgilbert@umes.edu) and *Simon Zebelo*, Univ. of Maryland Eastern Shore, Princess Anne, MD
- 3:45 PM **A Novel Insecticide: OrganiShield (Sucrose Octanoate).** *Kelly McIntyre* (mcintyrek@vt.edu) and *Thomas Kuhar*, Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 4:00 PM **PLINAZOLIN®: A New, Broad Spectrum Insecticide from Syngenta Crop Protection AG.** *Erin Hitchner* (erin.hitchner@syngenta.com), Syngenta Crop Protection LLC, Elmer, NJ
- 4:15 PM **Can Cucurbit Pest Management be Improved by Behavioral Control of Key Pests?** *Donald Weber* (Don.Weber@usda.gov)¹, *Anna Wallingford*², *Ariela Haber*¹, *Kayla Pasteur*³, *Sean Boyle*⁴ and *Thomas Kuhar*⁴, ¹USDA - ARS, Beltsville, MD, ²Univ. of New Hampshire, Durham, NH, ³USDA-ARS Invasiv Insect Biocontrol and Behavior Laboratory, Beltsville, MD, ⁴Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- 4:30 PM **Discussion**

Trials of the Insecticidal Peptide Kind: Recent Experiences with the Newest Neuromuscular Mode of Action, IRAC Group 32, GS-omega/kappa-Htx-Hv1a - Clover Room (Tuesday PM)

- 2:00 PM Welcoming Remarks.** Organizers: Daniel Peck, Vestaron Corp, Durham, NC and Philip Fanning, Univ. of Maine, Orono, ME
- 2:03 PM Development Overview of the Spear Peptide (GS-omega/kappa-Htx-Hv1a) Technology.** *Daniel Peck* (dpeck@vestaron.com) and Marja Koivunen, Vestaron Corp, Durham, NC
- 2:18 PM Evaluations of Spear Peptide Insecticides on Vegetable Pests in Virginia.** *Thomas Kuhar* (tkuhar@vt.edu)¹, Helene Doughy², Kelly McIntyre¹, Kemper Sutton¹ and Daniel Wilczek³, ¹Virginia Polytechnic Institute and State Univ., Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Painter, VA, ³Virginia Tech, Blacksburg, VA
- 2:33 PM Integrating New and Novel Modes of Action for Lepidopteran Pest Control in Tobacco.** *Hannah Burrack* (burrackh@msu.edu)¹ and Rocio Davila², ¹Michigan State Univ., East Lansing, MI, ²North Carolina State Univ., Raleigh, NC
- 2:48 PM Insecticidal Peptides: A New Tool for Integrated Management of Lepidopterous Pests in Apple.** *Jim Steffel* (jim@labservices.com) and Valen T. Straub, LABServices, Hamburg, PA
- 3:03 PM Activity of the Insecticidal Peptide GS-omega/kappa-Htx-Hv1a Against Spotted-Wing Drosophila.** *Philip Fanning* (philip.fanning@maine.edu)¹, Anthony VanWoerkom², John Wise³ and Rufus Isaacs³, ¹Univ. of Maine, Orono, ME, ²Michigan State Univ., Fennville, MI, ³Michigan State Univ., East Lansing, MI
- 3:18 PM Efficacy of New Insecticides for Control of Lepidopteran Pests on Cranberries.** *Cesar Rodriguez-Saona* (crodriguez@njaes.rutgers.edu), Rutgers, The State Univ. of New Jersey, Chatsworth, NJ
- 3:33 PM IR-4 Project's Interest in Alternative Pest Control Technologies: The Integrated Solution Program and Its Collaboration with Vestaron.** *Alice Axtell* (aaxtell@ncsu.edu), Venkat Pedibhotla and Jerry Baron, IR-4 Project, Raleigh, NC
- 3:48 PM Lab-Scale Success and Challenges of the New Neuromuscular Peptide Insecticide Spear.** *Daniel Hulbert* (dhulbert@vestaron.com) and Joseph Tourtois, Vestaron Corp, Kalamazoo, MI

Contributed Talks - State Drawing Room (Tuesday AM)

- 8:00 AM Introductory remarks Moderators:** Anna Wallingford, Univ. of New Hampshire, Durham, NH and Simon Zebelo, Univ. of Maryland Eastern Shore, Princess Anne, MD
- 8:05 AM Toward optimized surveillance of adventive *Trissolcus japonicus* (Ashmead) (Hymenoptera: Scelionidae) based on aspects of its foraging ecology.** *Jared Dyer* (djared@vt.edu)¹, Elijah Talamas², Tracy Leskey³ and J. Bergh¹, ¹Virginia Polytechnic Institute and State Univ., Winchester, VA, ²Florida Dept. of Agriculture and Consumer Services: Division of Plant Industry, Gainesville, FL, ³USDA-ARS, Kearneysville, WV
- 8:17 AM Possible vectoring interactions between *drosophila suzukii* and caneberry fruit rot fungi.** *Margaret Lewis* (mtlewis@terpmail.umd.edu), Mengjun Hu and Kelly Hamby, Univ. of Maryland, College Park, MD
- 8:29 AM Biological control of invasive emerald ash borer with introduced parasitoids: potential for North American ash recovery.** *Jian Duan* (jian.duan@usda.gov)¹, Roy van Driesche², Joseph Elkinton², Nicole Quinn², Jonathan Schmude³, Claire Rutledge⁴ and Ryan Crandall⁵, ¹USDA-ARS, Newark, DE, ²Univ. of Massachusetts, Amherst, MA, ³USDA - ARS, Newark, DE, ⁴Connecticut Agricultural Experiment Station, New Haven, CT, ⁵Univ. of Massachusetts, Sunderland, MA
- 8:41 AM Enhancing biological control by ground beetles (Coleoptera: Carabidae) through agricultural drainage ditch management practices.** *Alireza Shokoohi* (shokoohi@umd.edu), Univ. of Maryland, College Park, MD

- 8:53 AM Factors affecting *Oobius agrili* dispersal and parasitization of sentinel hosts. **Nicole Quinn** (nfquinn@umass.edu)^{1,2}, Joseph Elkinton² and Jian Duan¹, ¹USDA-ARS, Newark, DE, ²Univ. of Massachusetts, Amherst, MA
- 9:05 AM Female-specific responses to host plants drive management strategies for swede midge, *Contarinia nasturii*. **Andrea Campbell** (andrea.swan@uvm.edu)¹ and Yolanda Chen², ¹UVM, Burlington, VT, ²Univ. of Vermont, Burlington, VT
- 9:17 AM Native mason bees decline in the wake of non-native mason bee introductions. **Kathryn LeCroy** (kal8d@virginia.edu)¹ and T'ai Roulston², ¹Cornell Univ., Ithaca, NY, ²Univ. of Virginia, Boyce, VA
- 9:29 AM Managing swede midge in *Brassica* crops: a major challenge for pest management in the northeastern US. **Yolanda Chen** (yolanda.chen@uvm.edu)¹, Andrea Campbell¹, Elisabeth Hodgdon², Chase Stratton³, Christy Hoepting⁴ and Rebecca Hallett⁵, ¹Univ. of Vermont, Burlington, VT, ²Cornell Cooperative Extension, Plattsburgh, NY, ³The Land Institute, Salina, KS, ⁴Cornell Cooperative Extension, Albion, NY, ⁵Univ. of Guelph, Guelph, ON, Canada
- 9:41 AM Does the evolution of olfactory systems facilitate pollen specialization in bees? A comparative analysis **Avehi Singh** (avehi@psu.edu)¹, Nathaniel Pope¹ and Margarita M. Lopez-Urbe², ¹Penn State Univ., Univ. Park, PA, ²Penn State Univ., State College, PA
- 9:53 AM Dietary histories of mass-dispersing spotted lanternfly, *Lycorma delicatula* (Hemiptera: Fulgoridae). **James Hepler** (james.hepler@usda.gov) and Tracy Leskey, USDA-ARS, Kearneysville, WV
- 10:05 AM Break
- 10:17 AM Can natural enemy attractants play a role in landscape conservation biological control efforts? **Christopher Riley** (criley@Bartlett.com), Caitlin Littlejohn and Amber Stiller, Bartlett Tree Experts, Charlotte, NC
- 10:29 AM Survivorship of spotted lanternfly, *Lycorma delicatula*, and assessments of damage to a variety of agricultural crops. **Holly Shugart** (hxs5534@psu.edu), Heather Leach and Julie Urban, Pennsylvania State Univ., Univ. Park, PA
- 10:41 AM Tick Safe: A tick surveillance program on college-affiliated field sites in central Pennsylvania. **Karen Poh** (kpp5400@psu.edu)¹, Jessica Brown¹, Sarah Maestas², Lauren Paul Maestas³, Edwin Burgess² and Erika Machtinger¹, ¹Pennsylvania State Univ., Univ. Park, PA, ²Univ. of Florida, Gainesville, FL, ³United States Dept. of Agriculture, Edinburg, TX
- 10:53 AM Capacity of spotted lanternfly to travel on vehicle surfaces. **Johanna Elsensohn** (Johanna.elsensohn@usda.gov) and Tracy Leskey, USDA-ARS, Kearneysville, WV
- 11:05 AM Field-based approaches for assessing acceptability of wild and cultivated hosts of spotted lanternfly, *Lycorma delicatula*. **Laura Nixon** (laura.nixon@usda.gov)¹, Caitlin Barnes¹ and Tracy Leskey², ¹USDA - ARS, Kearneysville, WV, ²USDA-ARS, Kearneysville, WV
- 11:17 AM Characterizing spotted lanternfly, *Lycorma delicatula*, female reproductive development in eastern Pennsylvania. **Julie Urban** (jmu2@psu.edu) and Dennis Calvin, Pennsylvania State Univ., Univ. Park, PA
- 11:29 AM Floral visits by flower flies: Short-term nutrient enrichment and herbivore exclusion influence flower visitation in an old field community. **Holly Martinson** (hmartinson@mcdaniel.edu), Sophia Gilbert, Vance Ellis, Kaitlin Murphy and Jessica Wyatt, McDaniel College, Westminster, MD
- 11:41 AM Biological control and spatial mapping of *Tetranychus urticae* populations in watermelon. **Cody Stubbs** (cody.stubbs.cs@gmail.com), Univ. of Delaware, Georgetown, DE

Contributed Posters - Ballroom Balcony (Tuesday 8:00 AM-2:00 PM)

- DSP26 Nestmate recognition in paper wasps. **Andrew W. Legan** (awl75@cornell.edu), Vanderbilt Univ., Nashville, TN
- DSP27 title withdrawn
- DSP28 Minicell-based RNAi delivery for sustainable crop protection against *Plutella xylostella*, *Solenopsis invicta*, and *Spodoptera frugiperda*. **Lisa Chen** (payam@agrospheres.com), Jonathan Lacey and Elisabeth Somers, AgroSpheres, Charlottesville, VA
- DSP29 A historic look at EntSoc Eastern Branch: Our member response in a dynamic world. **Margaret Hartman** (mehartma@umd.edu) and William Lamp, Univ. of Maryland, College Park, MD
- DSP30 Survey of Virginia Extension Master Gardeners identifies top integrated pest management resource needs. **Stephanie Blevins Wycoff** (sblevin@vt.edu)¹, Tim C. McCoy² and Daniel Frank², ¹Virginia Tech Univ., Blacksburg, VA, ²Virginia Tech, Blacksburg, VA
- DSP31 The terrestrial isopod fauna (Isopoda: Oniscidea) of Virginia. **Kaloyan Ivanov** (kal.ivanov@vmnh.virginia.gov), Jackson C. Means and Liberty Hightower, Virginia Museum of Natural History, Martinsville, VA
- DSP32 Uncovering how partner interchangeability affects mutualistic outcomes in a species complex of seed-dispersing ants. **William Smisko** (wsmisk1@gmail.com), Carmela Buono, Andrew Lupinski, Gabriella Quartuccia, Thomas Powell and Kirsten Prior, Binghamton Univ., State Univ. of New York, Binghamton, NY
- DSP33 Reaching the next generation of entomologists: Creation and impact of a traveling field trip in Virginia. **Dana Beegle** (dbeegle@vt.edu), Stephanie Blevins, Whitney Weaver and Daniel Frank, Virginia Tech, Blacksburg, VA
- DSP34 Caterpillar recruitment in response to tree diversity in an experimental forest: The first 5 years. **Kelsey McGurri** (kmcgurri@umd.edu)¹, John Parker² and Karin Burghardt^{1,2}, ¹Univ. of Maryland, College Park, MD, ²Smithsonian Environmental Research Center, Edgewater, MD
- DSP35 First records of *Ixodes brunneus* (Acari: Ixodidae) in Delaware. **Wil Winter** (wil.winter@delaware.gov), Delaware Division of Fish and Wildlife, Milford, DE
- DSP36 Improving monitoring efforts for ambrosia beetles in Virginia. **Alejandro Del Pozo** (adelpozo@vt.edu), Elidah Hopkins, Devin Calpo, Julie Brindley and Peter Schultz, Virginia Polytechnic Institute and State Univ., Virginia Beach, VA
- DSP37 Seasonal effectiveness of traps and observers for detecting spotted lanternflies (*Lycorma delicatula*). **Joseph Keller** (jak573@psu.edu) and Kelli Hoover, Pennsylvania State Univ., Univ. Park, PA
- DSP38 Colorado potato beetles are attracted to both male- and female-produced pheromones in the field. **Ariela Haber** (ariela.haber@gmail.com) and Donald Weber, USDA - ARS, Beltsville, MD
- DSP39 Lack of agonism in *Nasutitermes acajutlae* between Caribbean islands. **Marielle Postava-Davignon** (mapd80@yahoo.com)¹ and Claire A. Fuller², ¹Virginia Wesleyan Univ., Virginia Beach, VA, ²Murray State Univ., Murray, KY
- DSP40 How does tree diversity affect spider functional groups and abundance? **Eva Perry** (evaperry@umd.edu)¹, Elizabeth Butz¹, Lauren Schmitt¹, John Parker² and Karin Burghardt^{1,2}, ¹Univ. of Maryland, College Park, MD, ²Smithsonian Environmental Research Center, Edgewater, MD
- DSP41 BCEENET: Providing a course-based entomological research experience for introductory biology students across multiple modalities. **Kathryn Weglarz** (kweglarz@westfield.ma.edu)¹, Carly Jordan² and Janice Krumm³, ¹Westfield State University, Westfield, MA, ²The George Washington Univ., Washington, DC, ³Widener Univ., Chester, PA
- DSP42 Detection of spectral bands sensitive to stress in green beans caused by potato leafhopper, *Empoasca fabae* (Hemiptera: Cicadellidae). **Bivek Bhusal** (bivek.bhusal@uconn.edu), Ana Legrand and Chandi Witharana, Univ. of Connecticut, Storrs, CT

- DSP43 **How effective are entomopathogenic fungi against wireworms? *Mika Pagani* (mika396@vt.edu), Virginia Polytechnic Institute and State Univ., Blacksburg, VA**
- DSP44 **Biophysical drivers of tick expansion due to climate change in Maine. *Brittany Schappach* (schappach003@connect.wcsu.edu) and Allison Gardner, Univ. of Maine, Orono, ME**
- DSP45 **Establishment of *Rickettsia parkeri*-infected populations of Gulf Coast ticks (*Amblyomma maculatum*) in New York City, New York, USA. *Jose Ramirez-Garofalo* (jose.ramirez.garofalo@rutgers.edu)¹, Shannon Curley², Caitlin Field³, Charles Hart^{4,5} and Saravanan Thangamani^{4,5}, ¹Rutgers Univ., Staten Island, NJ, ²The College of Staten Island, City Univ. of New York, Staten Island, NY, ³New York City Dept. of Parks and Recreation, New York, NY, ⁴SUNY Center for Vector-Borne Diseases, Syracuse, NY, ⁵Upstate Medical Univ., State Univ. of New York, Syracuse, NY**
- DSP46 **Hymenopteran parasitoids of *Leucotaraxis argenticollis* and *Le. piniperda*. (Diptera: Chamaemyiidae): Implications for biological control of hemlock woolly adelgid (Hemiptera: Adelgidae). *Sabrina Celis* (slc277@cornell.edu)¹, Nicholas Dietschler¹, Tonya Bittner¹, Nathan Havill², Michael Gates³, Matthew Buffington³ and Mark Whitmore¹, ¹Cornell Univ., Ithaca, NY, ²USDA - Forest Service, Hamden, CT, ³USDA - ARS, Washington, DC**
- DSP47 **Arthropod predation of spotted lanternfly (*Lycorma delicatula*) based on access to tree of heaven. *Anne Johnson* (aej5228@psu.edu), Sara Hermann and Kelli Hoover, Pennsylvania State Univ., Univ. Park, PA**
- DSP48 **Invertebrate associations with Podostemaceae in the Zuid River, Suriname. *Jacob Bethin* (bethin002@wcsu.edu), Rayda K. Krell and C. Philbrick, Western Connecticut State Univ., Danbury, CT**
- DSP49 **Exploring chemical management of threecornered alfalfa hopper in mid-Atlantic US soybean. *Sierra Bradley* (sbradley19@vt.edu)¹, Elizabeth Pittman² and Sally Taylor¹, ¹Virginia Polytechnic Institute and State Univ., Suffolk, VA, ²Virginia Cooperative Extension Service, Suffolk, VA**
- DSP50 **The impact of annual bluegrass weevil on the reflectance and health of *Poa annua*. *Shannon Bradley* (sgbradley@vt.edu)¹, Alejandro Del Pozo¹ and David McCall², ¹Virginia Polytechnic Institute and State Univ., Virginia Beach, VA, ²Virginia Polytechnic Institute and State Univ., Blacksburg, VA**
- DSP51 **Identifying repellents for spotted-wing drosophila from anthracnose-infected fruits. *Amanda Quadrel* (afq3@njaes.rutgers.edu)¹, Cesar Rodriguez-Saona² and Caitlin Rering³, ¹Rutgers, The State Univ. of New Jersey, New Brunswick, NJ, ²Rutgers, The State Univ. of New Jersey, Chatsworth, NJ, ³USDA - ARS, Gainesville, FL**
- DSP52 **Pilot survey on diversity and density of dung beetles in cattle pastures in New York. *Kenneth Wise* (klw24@cornell.edu), New York State Integrated Pest Management Program, Highland, NY**
- DSP53 **Tree species diversity and architecture determine spider abundance in a forest diversity experiment. *Elizabeth Butz* (ebutz@terpmail.umd.edu)¹, Lauren Schmitt¹, John Parker² and Karin Burghardt^{1,2}, ¹Univ. of Maryland, College Park, MD, ²Smithsonian Environmental Research Center, Edgewater, MD**
- DSP54 **Measuring soybean yield loss associated with infestation of *Dectes texanus* larvae. *Alan Leslie* (aleslie@umd.edu)¹, Edwin Afful², Rachel Sanford³, Cerruti Hooks³ and Kelly Hamby³, ¹Univ. of Maryland, Bel Alton, MD, ²IL Research Inc., Halethorpe, MD, ³Univ. of Maryland, College Park, MD**
- DSP55 **Advances in cranberry insect pest management: A literature synthesis. *Yahel Ben-Zvi* (y.bz@rutgers.edu)¹ and Cesar Rodriguez-Saona², ¹Rutgers, The State Univ. of New Jersey, New Brunswick, NJ, ²Rutgers Univ., New Brunswick, NJ**
- DSP56 **Rapid and precise assessment of insect pest outbreak using drones and sensors. *Yong-Lak Park* (yopark@mail.wvu.edu), West Virginia Univ., Morgantown, WV**
- DSP57 **Pest and beneficial insect populations in insecticide treated mid-Atlantic cotton. *John Schepis* (johnps20@vt.edu), Virginia Tech, Rockville, MD**
- DSP58 **The Influence of temperature and humidity on the efficacy of Aprehend®, an oil-based formulation of *Beauveria bassiana*, for control of the common bed bug, *Cimex lectularius* (Hemiptera: Cimicidae). *Dakotah***

Todd, **Stefan Jaronski** (thebugdoc01@gmail.com) and Dini Miller, Virginia Polytechnic Institute and State Univ., Blacksburg, VA

- DSP59 Possible range expansion of the red imported fire ant in Virginia and the effects of sub-lethal exposure to imidacloprid on its foraging behavior. **Morgan Malone** (mfmalone@vt.edu)¹, Sally Taylor², Kaloyan Ivanov³ and Roger Schurch⁴, ¹Virginia Tech, Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Suffolk, VA, ³Virginia Museum of Natural History, Martinsville, VA, ⁴Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- DSP60 Monitoring the population of mealybugs in Virginia vineyards. **Pragya Chalise** (pragyac9@vt.edu)¹ and Douglas Pfeiffer², ¹Virginia polytechnic Institute and State Univ., Blacksburg, VA, ²Virginia Polytechnic Institute and State Univ., Blacksburg, VA
- DSP61 Ancient origin of the terpene aggregation pheromone in the brown marmorated stinkbug, *Halymorpha halys*. Jason Lancaster¹, **Zarley Rebholz** (zarleyr@vt.edu)¹, Hailey Larose¹, Ashot Khimian², Michael E. Sparks², Donald Weber², Dawn Gundersen-Rindal² and Dorothea Tholl¹, ¹Virginia Tech, Blacksburg, VA, ²USDA - ARS, Beltsville, MD

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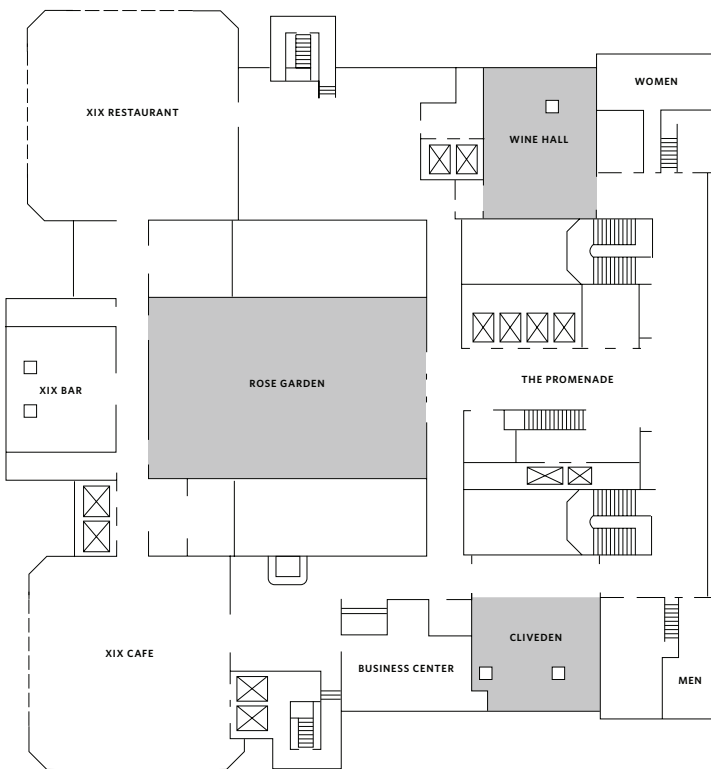
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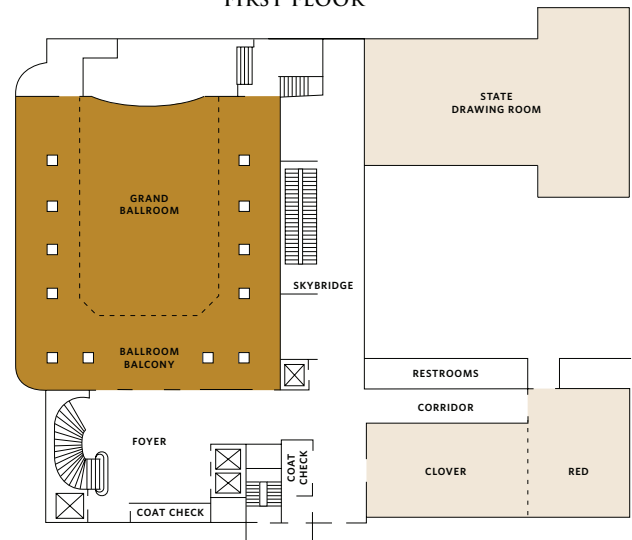


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