

Michigan State University Department of Entomology presentations
2017 Entomological Society of America meeting, Nov. 5-8, 2017, Denver, CO

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[Adams, Christopher G.](#)

[Sterile insect release for suppression of codling moth \(*Cydia pomonella*\) in Michigan apple orchards.](#) **Christopher Adams** (adamsch@msu.edu) and Larry Gut, Michigan State University, East Lansing, MI

[Nasonov-based dispensers for pollinator attraction in blueberry, apple and cherry](#) **Julie Williamson** (adamsju6@gmail.com), Christopher G. Adams, Larry Gut and Rufus Isaacs, Michigan State University, East Lansing, MI

[Albert, Jacquelyn L.](#)

[Field-level fungicide exposure to honey bees \(*Apis mellifera*\) during orchard bloom in Michigan](#) **Jacquelyn Albert** (albertj9@msu.edu) and Julianna Wilson, Michigan State University, East Lansing, MI

[Babcock, Nicholas](#)

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[Bandason, Elizabeth](#)

[Molecular basis of pyrethroid repellency](#) Peng Xu¹, Qiang Wang¹, Feng Liu¹, Elizabeth Bandason¹, Yoshiko Nomura¹, Shaoying Wu¹, Yuzhe Du¹, Leticia Smith², Jeff Scott², Kamlesh R. Chauhan³ and **Ke Dong** (dongk@cns.msu.edu)¹, ¹Michigan State University, East Lansing, MI, ²Cornell University, Ithaca, NY, ³USDA - ARS, Beltsville, MD

Benbow, M. Eric

[Building capacity for NGS data analysis in sub-Saharan Africa to improve public health research](#)

Joseph Receveur (josephreceveur@gmail.com)¹, Luc Djogbenou² and M. Eric Benbow¹,
¹Michigan State University, East Lansing, MI, ²Université d'Abomey-Calavi, Ouidah, Benin

[Calliphoridae microbiome dynamics during decomposition](#) **Jennifer Pechal**

(pechalje@msu.edu), Courtney Weatherbee and M. Eric Benbow, Michigan State University, East Lansing, MI

[Shedding light on emerald ash borer \(*Agrilus planipennis*\) indirect effects on aquatic ecosystem function](#) **Courtney Larson** (larso126@msu.edu), Patrick Engelken, Jennifer Pechal, Deborah G. McCullough and M. Eric Benbow, Michigan State University, East Lansing, MI

[The ecological importance of resource subsidies on insect-microbe interactions in aquatic ecosystems: The dispersal of novel microbes and their genomes in insect communities](#) **M. Eric Benbow** (benbow@msu.edu)¹, Jennifer Pechal¹, Courtney Larson¹, Patrick Engelken¹, Deborah G. McCullough¹, Ryan McEwan² and Kevin Custer², ¹Michigan State University, East Lansing, MI, ²University of Dayton, Dayton, OH

[Insects and microbes drive VOC emission from decomposing carrion resources](#) **Jonathan A. Cammack** (jcammack_07@tamu.edu)¹, Jennifer Pechal², Stephen Sweet¹, Tawni Crippen³, Anthony Knap¹, M. Eric Benbow² and Jeffery K. Tomberlin¹, ¹Texas A&M University, College Station, TX, ²Michigan State University, East Lansing, MI, ³USDA - ARS, College Station, TX

[Effects of emerald ash borer on riparian forest structure](#) **Patrick Engelken** (engelke2@msu.edu), Deborah G. McCullough, Courtney Larson and M. Eric Benbow, Michigan State University, East Lansing, MI

[The characterization of louse fly microbiomes on migrating raptors: Implications for avian pathogen dispersal](#) **Kayli Thomas** (klthoma3@millersville.edu)¹, Rebecca McCabe², Joseph Receveur³, M. Eric Benbow³, Jennifer Pechal³ and John R. Wallace¹, ¹Millersville University of Pennsylvania, Millersville, PA, ²Acopian Center for Conservation Learning at Hawk Mountain Sanctuary, Orwigsburg, PA, ³Michigan State University, East Lansing, MI

[An Introduction to the Aquatic Insects of North America: A new edition](#) Richard Merritt¹, **M. Eric Benbow** (benbow@msu.edu)¹, Martin B. Berg² and Kenneth Cummins¹, ¹Michigan State University, East Lansing, MI, ²Loyola University, Chicago, IL

Bennett, Ashley B.

[Do community gardens increase the abundance and richness of beneficial insects in surrounding green spaces?](#) **Ashley Bennett** (abb@nmsu.edu), Araceli Lopez-Binder and Wesley Noe, New Mexico State University, Los Lunas, NM

Blaauw, Brett

[Multi-state evaluation of polyculture trap crop for managing brown marmorated and native stink bugs in organic peppers](#) **Clarissa Mathews** (cmathews@shepherd.edu)^{1,2}, Brett Blaauw³, Galen Dively⁴, James Kotcon⁵, Jennifer Moore⁶, Emily Ogburn⁷, Douglas G. Pfeiffer⁸, Taliaferro Trope⁸, Jim Walgenbach⁷, Celeste Welty⁹, Gladis Zinati¹⁰ and Anne Nielsen¹¹, ¹Redbud Farm, LLC, Inwood, WV, ²Institute of Environmental and Physical Sciences, Shepherdstown, WV, ³Michigan State University, East Lansing, MI, ⁴University of Maryland, College Park, MD, ⁵West Virginia University, Morgantown, WV, ⁶University of Tennessee, Knoxville, TN, ⁷North Carolina State University, Mills River, NC, ⁸Virginia Polytechnic Institute and State University, Blacksburg, VA, ⁹The Ohio State University, Columbus, OH, ¹⁰Rodale Institute, Kutztown, PA, ¹¹Rutgers, The State University of New Jersey, Bridgeton, NJ

Bolt, Marguerite

[Influence of variety and management on chemically mediated hemp-pest interactions](#) **John J. Couture** (couture@purdue.edu)¹, Marguerite Bolt², Gordon McNickle¹ and Janna Beckerman¹, ¹Purdue University, West Lafayette, IN, ²Michigan State University, East Lansing, MI

[Influence of genetics and management on hemp-arthropod interactions](#) **Marguerite Bolt** (margyabolt@gmail.com)¹, Janna Beckerman² and John J. Couture², ¹Michigan State University, East Lansing, MI, ²Purdue University, West Lafayette, IN

Botch, Paul S.

[252 10-min: P-IE, Biocontrol, Parasitoids](#)

[Competition and host-specificity among *Trissolcus* wasps for egg masses of native and invasive stink bugs](#) **Krista De Cooke** (nicho452@msu.edu), Ernest Delfosse and Paul Botch, Michigan State University, East Lansing, MI

[Effects of host-species on the biotic potential of the Asian parasitoid wasp, *Trissolcus japonicus*](#) **Emmaline Gates** (gatesemm@msu.edu), Paul Botch and Ernest Delfosse, Michigan State University, East Lansing, MI

[Effects of pentatomid egg age on host acceptance, development and longevity of offspring for *Trissolcus japonicus*](#) **Paul Botch** (botchpau@msu.edu) and Ernest Delfosse, Michigan State University, East Lansing, MI

[Does placement of sentinel eggs on plant species affect success in attracting parasitoids?](#) **Ernest Delfosse** (delfosse@cns.msu.edu) and Paul Botch, Michigan State University, East Lansing, MI

Brokaw, Julia

[Emergence trapping for crop pollinators: Can we determine high quality nesting habitat for ground-nesting bees on Michigan blueberry farms?](#) **Julia Brokaw** (julia.n.brokaw@gmail.com)¹, Emily May², Shiala Naranjo³, Rufus Isaacs⁴ and Jason Gibbs^{4,5}, ¹University of Minnesota, St. Paul, MN, ²The Xerces Society for Invertebrate Conservation, Portland, OR, ³University of Central Florida, Orlando, FL, ⁴Michigan State University, East Lansing, MI, ⁵University of Manitoba, Winnipeg, MB, Canada

Buchanan, Amanda Lynn

[Habitat management for conservation biocontrol of a stem mining fly](#) **Amanda Buchanan** (alynn@msu.edu), Adam Ingrao and Zsofia Szendrei, Michigan State University, East Lansing, MI

Bush, Guy

[A 28S rRNA D2-D3 expansion variant useful in molecular identification of the apple maggot, *Rhagoletis pomonella* and the snowberry fly, *R. zephyria*](#) **James Smith** (jimsmith@msu.edu)¹, Daniel Hulbert¹, Mike Klaus² and Guy Bush³, ¹Michigan State University, East Lansing, MI, ²Washington State Department of Agriculture, Yakima, WA, ³Michigan State University, Fish Creek, WI

Chung, Henry

[Genetics of cuticular hydrocarbon evolution in *Drosophila*](#) **Henry Chung** (hwchung@msu.edu), Michigan State University, East Lansing, MI

[Cis-regulatory evolution in the elongase *bond* underlies a pheromonal difference between *Drosophila* species](#) **Jian Pu** (pujian@msu.edu)¹, Jessa Justen², Joanne Yew³ and Henry Chung¹, ¹Michigan State University, East Lansing, MI, ²University of Wisconsin, Madison, WI, ³University of Hawai'i, Honolulu, HI

Cognato, Anthony

[Ancient wanderlust leads to diversification of endemic Hawaiian *Xyleborus* species \(Coleoptera: Curculionidae: Scolytinae\)](#) **Anthony Cognato** (cognato@msu.edu)¹, Bjarte Jordal² and Daniel Rubinoff³, ¹Michigan State University, East Lansing, MI, ²University of Bergen, Bergen, Norway, ³University of Hawai'i, Honolulu, HI

[Developing an identification tool for Southeast Asian xyleborine ambrosia beetles \(Coleoptera: Curculionidae: Scolytinae\)](#) **Sarah Smith** (Smith462@msu.edu)¹, Roger A. Beaver², Jiri Hulcr³, Rachel Osborn⁴, Sudhir Singh⁵ and Anthony Cognato¹, ¹Michigan State University, East Lansing, MI, ²Chiangmai, Thailand, ³University of Florida, Gainesville, FL, ⁴Michigan State University, Okemos, MI, ⁵Forest Research Institute, Dehradun, India

[Multiple DNA loci for identification of southeast Asian ambrosia beetles \(Coleoptera: Curculionidae: Scolytinae: Xyleborini\)](#) **Gina Sari** (sarigina@msu.edu)¹, Sarah Smith¹, You Li², Thai Pham³, Wisut Sittichaya⁴, Hisashi Kajimura⁵, Sudhir Singh⁶, Jiri Hulcr² and Anthony Cognato¹, ¹Michigan State University, East Lansing, MI, ²University of Florida, Gainesville, FL, ³Vietnam National Museum of Nature, Hanoi, Vietnam, ⁴Prince of Songkla University, Hat Yai, Thailand, ⁵Nagoya University, Nagoya, Japan, ⁶Forest Research Institute, Dehradun, India

[Phylogenetic reconstruction of North American *Xyleborini* species](#) **Lidia Komondy** (lkomondy@msu.edu) and Anthony Cognato, Michigan State University, East Lansing, MI

Cole, Ellen

[Molecular diagnostics and phylogenetics of aster yellows phytoplasma \(AYp\) in leafhoppers](#) **Zsofia Szendrei** (szendrei@msu.edu), Katherine Demeuse, Ari Grode, Ellen Cole and Carolyn Malmstrom, Michigan State University, East Lansing, MI

Crum, James

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[De Cooke, Krista N.](#)

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[Delfosse, Ernest S.](#)

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[Metapopulations: From bacteria to elephants](#) **Ernest Delfosse** (delfosse@cns.msu.edu), Michigan State University, East Lansing, MI

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[Demeuse, Katherine](#)

[Understanding *Aedes japonicus japonicus* distribution in container habitats](#) **Katherine Demeuse** (demeusek@msu.edu) and Michael Kaufman, Michigan State University, East Lansing, MI

[Molecular diagnostics and phylogenetics of aster yellows phytoplasma \(AYp\) in leafhoppers](#) **Zsofia Szendrei** (szendrei@msu.edu), Katherine Demeuse, Ari Grode, Ellen Cole and Carolyn Malmstrom, Michigan State University, East Lansing, MI

[Dong, Ke](#)

[Induction phenology and response to semiochemicals of winter morph spotted wing *Drosophila*](#) **Heather Leach** (leachhea@msu.edu), Danielle Kirkpatrick, Jaclyn Stone, Peng Xu, Ke Dong, Larry Gut and Rufus Isaacs, Michigan State University, East Lansing, MI

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[Du, Yuzhe](#)

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[Fanning, Philip](#)

[295 Member Symposium: Interdisciplinary Approaches to IPM](#)

[Severe induction of a native secondary pest by an invasive primary pest: The role of natural enemies](#) **Philip Fanning** (fanning9@msu.edu), Benjamin Johnson, Steven Van Timmeren and Rufus Isaacs, Michigan State University, East Lansing, MI

[Galley, Sarah](#)

[The impact of strip tillage and cover crops on pests and beneficials in organic squash](#) **Sarah Galley** (galleya@msu.edu) and Zsofia Szendrei, Michigan State University, East Lansing, MI

[Gates, Emmaline M.](#)

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Emmaline Gates (gatesemm@msu.edu), Paul Botch and Ernest Delfosse, Michigan State University, East Lansing, MI

[Grieshop, Matt J.](#)

[Multistate comparison of attractants, and the impact of background volatiles on trapping *Drosophila suzukii* \(Diptera: Drosophilidae\) in raspberry and blueberry](#) **Benjamin Jaffe** (bjaffe2@wisc.edu)¹, Harit K. Bal², Joshua Grant³, Matt Grieshop⁴, Jana Lee⁵, Oscar Liburd⁶, Eric McDougal⁵, Cesar Rodriguez⁷, Elena Rhodes⁶, Ashfaq Sial³, Aijun Zhang⁸ and Christelle Guédot¹, ¹University of Wisconsin, Madison, WI, ²Association of Indian Entomologists in North America, East Lansing, MI, ³University of Georgia, Athens, GA, ⁴Michigan State University, East Lansing, MI, ⁵USDA - ARS, Corvallis, OR, ⁶University of Florida, Gainesville, FL, ⁷Rutgers, The State University of New Jersey, Chatsworth, NJ, ⁸USDA - ARS, Beltsville, MD

[Field-scale exploration of invertebrate communities with metagenomic approaches: Detritivores in apple orchards](#) **Jason Matlock** (matlockj@msu.edu) and Matt Grieshop, Michigan State University, East Lansing, MI

[Development and implementation of systems-based organic management strategies for spotted wing drosophila: An OREI project update](#) Ashfaq Sial¹, **Rufus Isaacs** (isaacsr@msu.edu)², Matt Grieshop², Christelle Guédot³, Kelly Hamby⁴, Vaughn Walton⁵, Mary Rogers⁶ and Hannah Burrack⁷, ¹University of Georgia, Athens, GA, ²Michigan State University, East Lansing, MI, ³University of Wisconsin, Madison, WI, ⁴University of Maryland, College Park, MD, ⁵Oregon State University, Corvallis, OR, ⁶University of Minnesota, St. Paul, MN, ⁷North Carolina State University, Raleigh, NC

[Evaluation of food-based attractants for spotted wing drosophila, *Drosophila suzukii*](#) **Juan Huang** (huangju@msu.edu), Larry Gut and Matt Grieshop, Michigan State University, East Lansing, MI

[On- and off-season habitat evaluation for *Drosophila suzukii* \(Diptera: Drosophilidae\)](#) **Harit K. Bal** (bal@msu.edu)¹, Clarence Green², Christelle Guédot³, Lindsay Iglesias⁴, Oscar Liburd⁴, Ashfaq Sial² and Matt Grieshop¹, ¹Michigan State University, East Lansing, MI, ²University of Georgia, Athens, GA, ³University of Wisconsin, Madison, WI, ⁴University of Florida, Gainesville, FL

[Spray coverage of a solid set canopy delivery system in grapes, raspberries, and blueberries](#) **Matt Grieshop** (grieshop@msu.edu), Paul Owen-Smith and Jacob Malsch, Michigan State University, East Lansing, MI

[Grode, Ari S.](#)

[Molecular diagnostics and phylogenetics of aster yellows phytoplasma \(AYp\) in leafhoppers](#)

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[Nasonov-based dispensers for pollinator attraction in blueberry, apple and cherry](#) **Julie**

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[Behavioral responses of *Drosophila suzukii* winter and summer morphs to visual and olfactory cues](#) **Danielle Kirkpatrick** (kirkpa42@msu.edu), Heather Leach, Rufus Isaacs and Larry Gut, Michigan State University, East Lansing, MI

[Testing novel attractants for *Drosophila suzukii*](#) **Cesar Rodriguez-Saona**

(crodriguez@rce.rutgers.edu)¹, Johnattan Hernández-Cumplido¹, Hannah Burrack², Frank Drummond³, Larry Gut⁴, Rufus Isaacs⁴, Gregory Loeb⁵, Anne Nielsen⁶, Zainulabeuddin Syed⁷, Kyoo Park⁸, Vaughn Walton⁸ and Aijun Zhang⁹, ¹Rutgers, The State University of New Jersey, New Brunswick, NJ, ²North Carolina State University, Raleigh, NC, ³University of Maine, Orono, ME, ⁴Michigan State University, East Lansing, MI, ⁵Cornell University, Geneva, NY, ⁶Rutgers, The State University of New Jersey, Bridgeton, NJ, ⁷University of Notre Dame, Notre Dame, IN, ⁸Oregon State University, Corvallis, OR, ⁹USDA - ARS, Beltsville, MD

[Sustainable spotted wing drosophila management in US fruit crops: Year 2 update](#) **Hannah**

Burrack (hannah_burrack@ncsu.edu)¹, Joanna Chiu², Kent Daane³, Miguel Gomez⁴, Larry Gut⁵, Rufus Isaacs⁵, Gregory Loeb⁶, Cesar Rodriguez-Saona⁷, Ashfaq Sial⁸, Vaughn Walton⁹ and Frank Zalom², ¹North Carolina State University, Raleigh, NC, ²University of California, Davis, CA, ³University of California, Parlier, CA, ⁴Cornell University, Ithaca, NY, ⁵Michigan State University, East Lansing, MI, ⁶Cornell University, Geneva, NY, ⁷Rutgers, The State University of New Jersey, New Brunswick, NJ, ⁸University of Georgia, Athens, GA, ⁹Oregon State University, Corvallis, OR

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[orchards](#). **Christopher Adams** (adamsch@msu.edu) and Larry Gut, Michigan State University, East Lansing, MI

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[**Hermann, Sara L.**](#)

[The ecology of fear: Understanding how the threat of predation impacts insect prey](#) **Sara Hermann** (slh@msu.edu) and Douglas A. Landis, Michigan State University, East Lansing, MI

[**Huang, Juan**](#)

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[**Huang, Zachary Y.**](#)

[Parasite manipulating hosts: *Nosema ceranae* infected honey bee workers are more easily accepted by non-nestmates](#) **Zachary Y. Huang** (bees@msu.edu) and Yujie Li, Michigan State University, East Lansing, MI

[Palynological analysis of pollen collected by honey bees \(*Apis mellifera*\) in developed areas in four regions of the United States](#) **Pierre Lau** (plau0168@tamu.edu)¹, Juliana Rangel¹, Vaughn Bryant¹, Ana Cabrera², Daniel Schmehl², Joseph Sullivan³, Zachary Y. Huang⁴ and James Ellis⁵, ¹Texas A&M University, College Station, TX, ²Bayer CropScience, Research Triangle Park, NC, ³Ardea Consulting, Woodland, CA, ⁴Michigan State University, East Lansing, MI, ⁵University of Florida, Gainesville, FL

[**Hulbert, Daniel Lloyd**](#)

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[A new species of *Rhagoletis* \(Diptera: Tephritidae\) in the *tabellaria* species group: Morphology, molecular phylogenetics, and host-plant use](#) **Daniel Hulbert** (hulbertd@msu.edu)¹, Morgan Jackson² and James Smith¹, ¹Michigan State University, East Lansing, MI, ²University of Guelph, Guelph, ON, Canada

[Ingrao, Adam Joseph](#)

[Habitat management for conservation biocontrol of a stem mining fly](#) **Amanda Buchanan** (alynn@msu.edu), Adam Ingrao and Zsofia Szendrei, Michigan State University, East Lansing, MI

[Natural enemy attraction to herbivore induced asparagus volatiles](#) **Adam Ingrao** (ingraoad@msu.edu) and Zsofia Szendrei, Michigan State University, East Lansing, MI

[Isaacs, Rufus](#)

[Mason bee construction: Patterns of soil composition across species, nest tubes, and partitions](#) **Mario Pinilla-Gallego** (simonpinilla@yahoo.com), James Crum and Rufus Isaacs, Michigan State University, East Lansing, MI

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[Lessons learned from establishing wildflower plantings for wild bee conservation near perennial fruit crops in Michigan](#) **Julianna Wilson** (jkwilson@msu.edu)¹, Rufus Isaacs¹, Thomas Wood¹ and Jason Gibbs², ¹Michigan State University, East Lansing, MI, ²University of Manitoba, Winnipeg, MB, Canada

[Plant selection to support pollinators and natural enemies in Michigan farm landscapes and beyond](#) **Logan Rowe** (roweloga@msu.edu), Dan Gibson, Rufus Isaacs and Douglas A. Landis, Michigan State University, East Lansing, MI

[Flower power: Habitat management to support crop pollination and pest management](#) **Brett Blaauw** (bblaauw@uga.edu)¹, Rufus Isaacs² and Anne Nielsen², ¹University of Georgia, Athens, GA, ²Michigan State University, East Lansing, MI

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[The salt test method: an efficient tool to monitor for spotted wing drosophila infestation in fruit](#) **Lauren Diepenbrock** (laurendiepenbrock@gmail.com)¹, Steven Van Timmeren², Matt Bertone¹, Hannah Burrack¹ and Rufus Isaacs², ¹North Carolina State University, Raleigh, NC, ²Michigan State University, East Lansing, MI

[A semi-field bioassay protocol for assessing the effectiveness of field-aged insecticides against spotted-wing drosophila](#) **Steven Van Timmeren** (vantimm2@msu.edu) and Rufus Isaacs, Michigan State University, East Lansing, MI

[Sustainable spotted wing drosophila management in US fruit crops: Year 2 update](#) **Hannah Burrack** (hannah_burrack@ncsu.edu)¹, Joanna Chiu², Kent Daane³, Miguel Gomez⁴, Larry Gut⁵, Rufus Isaacs⁵, Gregory Loeb⁶, Cesar Rodriguez-Saona⁷, Ashfaq Sial⁸, Vaughn Walton⁹ and Frank Zalom², ¹North Carolina State University, Raleigh, NC, ²University of California, Davis, CA, ³University of California, Parlier, CA, ⁴Cornell University, Ithaca, NY, ⁵Michigan State University, East Lansing, MI, ⁶Cornell University, Geneva, NY, ⁷Rutgers, The State University of New Jersey, New Brunswick, NJ, ⁸University of Georgia, Athens, GA, ⁹Oregon State University, Corvallis, OR

[Development and implementation of systems-based organic management strategies for spotted wing drosophila: An OREI project update](#) Ashfaq Sial¹, **Rufus Isaacs** (isaacsr@msu.edu)², Matt Grieshop², Christelle Guédot³, Kelly Hamby⁴, Vaughn Walton⁵, Mary Rogers⁶ and Hannah Burrack⁷, ¹University of Georgia, Athens, GA, ²Michigan State University, East Lansing, MI, ³University of Wisconsin, Madison, WI, ⁴University of Maryland, College Park, MD, ⁵Oregon State University, Corvallis, OR, ⁶University of Minnesota, St. Paul, MN, ⁷North Carolina State University, Raleigh, NC

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[Root aphids in the greenhouse: Observations and recommendations](#) **Jeremy Jubenville** (jeremy.jubenville@gmail.com), West Michigan IPM, Kalamazoo, MI

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[Understanding *Aedes japonicus japonicus* distribution in container habitats](#) **Katherine Demeuse** (demeusek@msu.edu) and Michael Kaufman, Michigan State University, East Lansing, MI

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[Ant suppression reduces biological control potential in grasslands](#) **Bill Wills** (willsbd@gmail.com)¹, Tania Kim², Claudio Gratton² and Douglas A. Landis¹, ¹Michigan State University, East Lansing, MI, ²University of Wisconsin, Madison, WI

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[Parasite manipulating hosts: *Nosema ceranae* infected honey bee workers are more easily accepted by non-nestmates](#) **Zachary Y. Huang** (bees@msu.edu) and Yujie Li, Michigan State University, East Lansing, MI

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[Molecular basis of pyrethroid repellency](#) Peng Xu¹, Qiang Wang¹, Feng Liu¹, Elizabeth Bandason¹, Yoshiko Nomura¹, Shaoying Wu¹, Yuzhe Du¹, Leticia Smith², Jeff Scott², Kamlesh R. Chauhan³ and **Ke Dong** (dongk@cns.msu.edu)¹, ¹Michigan State University, East Lansing, MI, ²Cornell University, Ithaca, NY, ³USDA - ARS, Beltsville, MD

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[An Introduction to the Aquatic Insects of North America: A new edition](#) Richard Merritt¹, **M. Eric Benbow** (benbow@msu.edu)¹, Martin B. Berg² and Kenneth Cummins¹, ¹Michigan State University, East Lansing, MI, ²Loyola University, Chicago, IL

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[Calliphoridae microbiome dynamics during decomposition](#) **Jennifer Pechal**

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[Insects and microbes drive VOC emission from decomposing carrion resources](#) **Jonathan A. Cammack** (jcammack_07@tamu.edu)¹, Jennifer Pechal², Stephen Sweet¹, Tawni Crippen³, Anthony Knap¹, M. Eric Benbow² and Jeffery K. Tomberlin¹, ¹Texas A&M University, College Station, TX, ²Michigan State University, East Lansing, MI, ³USDA - ARS, College Station, TX

[The characterization of louse fly microbiomes on migrating raptors: Implications for avian pathogen dispersal](#) **Kayli Thomas** (klthoma3@millersville.edu)¹, Rebecca McCabe², Joseph Receveur³, M. Eric Benbow³, Jennifer Pechal³ and John R. Wallace¹, ¹Millersville University of Pennsylvania, Millersville, PA, ²Acopian Center for Conservation Learning at Hawk Mountain Sanctuary, Orwigsburg, PA, ³Michigan State University, East Lansing, MI

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[Mason bee construction: Patterns of soil composition across species, nest tubes, and partitions](#)
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[Cis-regulatory evolution in the elongase *bond* underlies a pheromonal difference between *Drosophila* species](#). **Jian Pu** (pujian@msu.edu)¹, Jessa Justen², Joanne Yew³ and Henry Chung¹,
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[Building capacity for NGS data analysis in sub-Saharan Africa to improve public health research](#)
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[Multiple DNA loci for identification of southeast Asian ambrosia beetles \(Coleoptera: Curculionidae: Scolytinae: Xyleborini\)](#) **Gina Sari** (sarigina@msu.edu)¹, Sarah Smith¹, You Li², Thai Pham³, Wisut Sittichaya⁴, Hisashi Kajimura⁵, Sudhir Singh⁶, Jiri Hulcr² and Anthony Cognato¹, ¹Michigan State University, East Lansing, MI, ²University of Florida, Gainesville, FL, ³Vietnam National Museum of Nature, Hanoi, Vietnam, ⁴Prince of Songkla University, Hat Yai, Thailand, ⁵Nagoya University, Nagoya, Japan, ⁶Forest Research Institute, Dehradun, India

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[A 28S rRNA D2-D3 expansion variant useful in molecular identification of the apple maggot, *Rhagoletis pomonella* and the snowberry fly, *R. zephyria*](#) **James Smith** (jimsmith@msu.edu)¹, Daniel Hulbert¹, Mike Klaus² and Guy Bush³, ¹Michigan State University, East Lansing, MI, ²Washington State Department of Agriculture, Yakima, WA, ³Michigan State University, Fish Creek, WI

[From host race to species: Genome-wide divergence parallels ecological variation within and across species in the *Rhagoletis pomonella* complex \(Diptera: Tephritidae\)](#) **Meredith Doellman** (mdoellma@nd.edu)¹, Thomas Powell², Katherine Inskeep¹, Scott Egan³, Gregory Ragland⁴, Peter Meyers¹, Glen Hood³, James Smith⁵, Stewart Berlocher⁶ and Jeffrey Feder¹, ¹University of Notre Dame, Notre Dame, IN, ²State University of New York, Binghamton, NY, ³Rice University, Houston, TX, ⁴University of Colorado, Denver, CO, ⁵Michigan State University, East Lansing, MI, ⁶University of Illinois, Champaign, IL

[A new species of *Rhagoletis* \(Diptera: Tephritidae\) in the *tabellaria* species group: Morphology, molecular phylogenetics, and host-plant use](#) **Daniel Hulbert** (hulberd@msu.edu)¹, Morgan Jackson² and James Smith¹, ¹Michigan State University, East Lansing, MI, ²University of Guelph, Guelph, ON, Canada

[Investigation of genetic diversity in mtDNA \(COI-COII\) region of *Ceratitis capitata* Wiedmann \(Diptera: Tephritidae\) in the eastern Mediterranean region of Turkey](#) Adnan Tusun¹, Jim Smith² and **Serdar Satar** (hserhat@cu.edu.tr)³, ¹Çukurova University, Adana, Turkey, ²Michigan State University, East Lansing, MI, ³Çukurova University, Adana, Turkey

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[Long-term suppression of Japanese beetle by *Ovavesicula popilliae*, a microsporidean pathogen](#)
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[Management options for greenhouse pests that protect pollinators](#) **Cristi L. Palmer** (palmer@aesop.rutgers.edu)¹, James A. Bethke², Juang-Horng Chong³, Daniel Gilrein⁴ and David R. Smitley⁵, ¹Rutgers, The State University of New Jersey, New Brunswick, NJ, ²University of California Cooperative Extension, San Diego, CA, ³Clemson University, Clemson, SC, ⁴Long Island Horticultural Research and Extension Center, Riverhead, NY, ⁵Michigan State University, East Lansing, MI

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[Habitat management for conservation biocontrol of a stem mining fly](#) **Amanda Buchanan** (alynn@msu.edu), Adam Ingrao and Zsafia Szendrei, Michigan State University, East Lansing, MI

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[Natural enemy attraction to herbivore induced asparagus volatiles](#) **Adam Ingraio**

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[The impact of strip tillage and cover crops on pests and beneficials in organic squash](#) **Sarah**

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[Nasonov-based dispensers for pollinator attraction in blueberry, apple and cherry](#) **Julie Williamson** (adamsju6@gmail.com), Christopher G. Adams, Larry Gut and Rufus Isaacs, Michigan State University, East Lansing, MI

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[Lessons learned from establishing wildflower plantings for wild bee conservation near perennial fruit crops in Michigan](#) **Julianna Wilson** (jkwilson@msu.edu)¹, Rufus Isaacs¹, Thomas Wood¹ and Jason Gibbs², ¹Michigan State University, East Lansing, MI, ²University of Manitoba, Winnipeg, MB, Canada

[Field-level fungicide exposure to honey bees \(*Apis mellifera*\) during orchard bloom in Michigan](#) **Jacquelyn Albert** (albertj9@msu.edu) and Julianna Wilson, Michigan State University, East Lansing, MI

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[Field evolved resistance of arthropods to pesticides: An analysis of resistance adaptation from 1914 to 2017](#) **David Mota-Sanchez** (motasanc@msu.edu) and John Wise, Michigan State University, East Lansing, MI

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[Molecular basis of pyrethroid repellency](#) Peng Xu¹, Qiang Wang¹, Feng Liu¹, Elizabeth Bandason¹, Yoshiko Nomura¹, Shaoying Wu¹, Yuzhe Du¹, Leticia Smith², Jeff Scott², Kamlesh R. Chauhan³ and **Ke Dong** (dongk@cns.msu.edu)¹, ¹Michigan State University, East Lansing, MI, ²Cornell University, Ithaca, NY, ³USDA - ARS, Beltsville, MD

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