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EDUCATION

Purdue University

West Lafayette, IN, USA

Ph.D., Entomology (Dec. 2007).

AWARDS AND HONORS

- 2025 Turner and Collins Award, International Union for Study of Social Insects- North American Section
- 2024 Distinguished Achievement Award in the Promotion of Diversity and Inclusion in the Field of Entomology, *Entomological Society of America (ESA)*
- 2023 Zenith Award – Honors senior career professionals with a lifetime of innovative achievements in STEM and a commitment to workplace diversity, *Association for Women In Science*
- 2023 John V. Osmun Alumni Professional Achievement Award in Entomology, *Purdue University*
- 2023 Invited Participant of the NSF workshop LIFE: Leveraging Innovation From Evolution, *National Science Foundation (NSF)*
- 2023 Presidential Faculty Excellence Award for Teaching, Research, and Service; *Central State University (CSU)*
- 2023 Travel Grant for Annual Conference, *Animal Behavior Society (ABS)*
- 2022 Fellow, *the Royal Entomological Society* (United Kingdom)
- 2022 *ESA Public Health Entomology For All (PHEFA)* Award to Joint Annual Meeting
- 2022 Faculty Honorable Achievement Award, *CSU*
- 2021 Presidential Faculty Excellence Award for Research, *CSU*
- 2020 Faculty Researcher or Scholarly Activities Award, *CSU*
- 2019 Awardee for the NSF workshop of Weaving the Future of Animal Behavior, *ABS*
- 2016 Go Mini Scientific Challenge Grant Winner (\$50k), 2nd place, *Illumina, Inc.*
- 2016 Peer-to-Peer Training Fellowship, Insect Genetics Technologies Research Coordination Network (IGTRCN), *NSF*
- 2016 North America Pollinator Protection Campaign Grant, *North America Pollinator Protection Campaign*
- 2015 Sustainability in Teaching and Practice Academy (\$2k), *North Carolina State University*.
- 2015 Award for the Cold Spring Harbor Meeting: Genome and Biology of Social Insects, *United States Department of Agriculture (USDA)*
- 2014-17 National Research Council Research Fellowship (\$75k), Army Research Lab, *National Academy of Science*
- 2014 Peer-to-Peer Training Fellowship, Insect Genetic Technologies Research Coordination Network, *NSF*
- 2007 Pest Management Conference Student Award (\$1000), *Purdue University*
- 2003 Ohio Valley Entomological Association, Graduate Research Oral Presentation 2nd place
- 2002 Graduate School Ross Fellowship (4, total of \$60,000), *Purdue University*

Peer-Reviewed Scientific Papers: h-index: 25. # indicates equal contribution. @ Indicates the corresponding authorship.

Published or Accepted Peer-reviewed Publications

- 80 Pudasaini R, **Li-Byarlay H**, 2027. The underlying mechanisms of Varroa resistance in honey bee colonies Threats to Pollinator Abundance and Diversity, 207-235.
- 79 S Chen, J Wang, S Yang, J Han, S Zhou, X Shi, **H Li-Byarlay**, D Luo, C Ma. 2026. Combined imidacloprid and chlorpyrifos disrupt gut microbiota-host interactions and reduced performance and survival in honey bees. *Journal of Insect Physiology*, 105070.
- 78 Byarlay M, Li-Byarlay H, 2026. Rain and Wings, insect poetry book. One plus book.
- 77 CF de Carvalho, J Ord, P Escuer, JA Fox, **H Li-Byarlay**, L Peck, ... 2026. Long-read sequencing for epigenomic studies in the fields of ecology and evolution. *Philosophical Transactions of the Royal Society B: Biological Sciences* 381.
- 76 Ma C, Chen S, Shi X, Wu J, Bai L, **Li-Byarlay H**, Li Z. 2026. Non-crop flora in urban landscapes provide persistent glyphosate exposure pathways for honey bees. *Journal of Hazardous Materials*, 505, 141419.
- 75 Yang S, Wang J, Luo D, Yu W, Zhang X, **Li-Byarlay H**, Bai L, Ma C. 2026. Species-specific physiological and molecular responses of three bee pollinators to field-level atrazine exposure. *Pesticide Biochemistry and Physiology*. 107259.
- 74 Pudasaini R, **Li-Byarlay H**. 2026 Elsevier Book: Threats to Pollinator Abundance and Diversity. Editor: Scott. Chapter 9. The underlying mechanisms of Varroa resistance in honey bee colonies. ISBN: 9780443403583.
- 73 Wang F, J Dai, L Xie, X Chen, S Guo, J Wang, X Yao, M Imran, **Li-Byarlay H**, S Luo, 2026. A Novel Solution Pollination in Orchards. *Journal of Cleaner Production* 544, 147661.
- 72 Briscoe K, M Byarlay, R Johnson, S Rehan, Li-Byarlay H, 2026. Oxidative Stress in two pollinators from Different Landscapes based on different pesticide residue profiles. *Physiological Entomology*, 1-11.
- 71 Hubhachena Z, H Strachan, R Pudasaini, X Cleare, D Kroh, **H Li-Byarlay**. 2026. Genetic Variation in Honey Bee Queen Reproductive Performance: Implications for Colony Growth and Sustainability. *Journal of Apicultural Research*. Accepted
- 70 de Carvalho C F, ...**Li-Byarlay H**, ... Marshall H et al., 2026. Long-read sequencing for epigenomic studies in the fields of Ecology and Evolution. *Philosophical Transactions of the Royal Society B*, 381: 20250099. <https://doi.org/10.1098/rstb.2025.009>
- 69 Zhao Z, Pudasaini R, Kroh D, Rehan S, **Li-Byarlay H**, 2025. Developmental and Environmental Stability of Candidate Reference Genes in the Wild Bee *Ceratina calcarata*. *Scientific Review* 15:39046.
- 68 Cao W, S Yang, J Wang, S Chen, M Byarlay, X Shi, H Li-Byarlay, C Ma, Field-realistic cyfluthrin exposure alters multi-omics profiles in *Bombus terrestris*: Implications for wild pollinator health, *Pesticide Biochemistry and Physiology*, 106896.
- 67 Ma, C., Chen, S., Shi, X., Bai, L., **Li-Byarlay, H.** and Li, Z., 2025. Impact of chronic exposure to field-level glyphosate on the gut microbiota of *Apis cerana* and *Apis mellifera*. *Ecotoxicology and Environmental Safety*, 304, p.119074.
- 66 Windon S, ... **Li-Byarlay H**, Azebelo S, Gill TA, Grozinger C. 2025. Boosting STEM in Agriculture Career Readiness: Evaluation of a Virtual Symposium for MSI Students, *Journal of Youth Development*. (accepted)

- 65 Clark NL, Hittinger CT, **Li-Byarlay H**, Rokas A, Sackton TB, Unckless RL, 2025. Integrating Intermediate Traits in Phylogenetic Genotype-to-Phenotype Studies, Integrative and Comparative Biology, icaf037, <https://doi.org/10.1093/icb/icaf037>
- 64 Sharanowski B, Maughan H, Meyer W, Mayes ML, Goodey N, **Li-Byarlay H**, Smith K, 2025. A social web to stimulate interdisciplinary collaborations, Integrative and Comparative Biology, icaf033, <https://doi.org/10.1093/icb/icaf033>
- 63 Guo Y, C Ma, W Zhao, H Kuang, Y Tian, H Zhang, Y Xue, **Li-Byarlay H**, K Dong, X Gong@, Chronic exposure to field level thiamethoxam impairs gut tissue and reduces honeybee (*Apis cerana*) survival. Insects. 2025, 16, 372. <https://doi.org/10.3390/insects16040372>
- 62 **Li-Byarlay H**, Chapter 5 Epigenomics, 2025. in Techer et al., Standard methods and good practices in *Apis* honey bee omics research, COLOSS BEEBOOK Vol IV, *Journal of Apicultural Research* <https://doi.org/10.1080/00218839.2025.2455852>
- 61 **Li-Byarlay H**, Chapter 6 Transcriptomics, 2025. in Techer et al., Standard methods and good practices in *Apis* honey bee omics research, COLOSS BEEBOOK Vol IV, *Journal of Apicultural Research* <https://doi.org/10.1080/00218839.2025.2455852>
- 60 **Li-Byarlay H** and MC Farrell, Chapter 7 Functional Genomics and Xenobiotic treatments, 2025. in Techer et al., Standard methods and good practices in *Apis* honey bee omics research, COLOSS BEEBOOK Vol IV, *Journal of Apicultural Research* <https://doi.org/10.1080/00218839.2025.2455852>
- 59 **Li-Byarlay@ H**, Young K, Cleare X, Cao D, Luo S. 2025. Biting behavior against *Varroa* mites in honey bees is associated with changes in mandibles, with tracking by a new mobile application for mite damage identification. *Apidologie* **56**: 3. <https://doi.org/10.1007/s13592-024-01126-z>
- 58 Wang F, Chen X, Xie L, Guo S, **Li-Byarlay H**, Wu X, and Luo S, 2024. Insights into Adult Worker Foraging Dynamics within a Bumblebee (*Bombus terrestris*) Colony. *Journal of Economic Entomology* p. toae295. <https://doi.org/10.1093/je/toae295>
- 57 Chen M, Ma Z, Hou J, Zhang L, **Li-Byarlay H**, He B, 2024. The effects of Cl⁻ channel inhibitors and pyrethroid insecticides on Calcium-activated chlorine channels in neurons of *Helicoverpa armigera*. *Comparative Biochemistry and Physiology, Part C. Toxicology and Pharmacology* 285, 109999.(IF = 3.9)
- 56 Liu J, Z Chen, F Ma, D Liu, **H Li-Byarlay**, X Chang, Y Zhang, X Chen, et al. 2024, Antimicrobial activities of polyphenol-based metabolites present in lettuce and recent methods for their estimation. *Quality Assurance and Safety of Crops & Foods* 16 (4), 1-16. (IF = 0.558)
- 55 Jiang X, Guan D, Li Q, Liu X, He B, **Li-Byarlay H @**, 2024. Effects of tefluthrin and guadipyr on the midgut bacteria of adult *Apis mellifera*. *Pesticide Biochemistry and Physiology* 2024, 105940. DOI: 10.1016/j.pestbp.2024.105940. (IF = 4.7)
- 54 **Li-Byarlay H**. 2024. Peer Review Report For: Boyes D, University of Oxford and Wytham Woods Genome Acquisition Lab, Darwin Tree of Life Barcoding collective et al. The genome sequence of the Dark Arches *Apamea monoglypha* (Hufnagel, 1766). [version 1; peer review: awaiting peer review]. *Wellcome Open Res* 2023, 8:63. <https://wellcomeopenresearch.org/articles/8-63/v1#referee-response-87697>
- 53 **Li-Byarlay H** and Azevedo P. 2024. Peer Review Report For: The genome sequence of the Large Sharp-tail Bee, *Coelioxys conoideus* (Illiger, 1806) [version 1; peer review: 1 approved]. *Wellcome Open Res* 2023, 8:259. <https://doi.org/10.21956/wellcomeopenres.21609.r87080>
- 52 Ma C, Gu G, Chen S, Shi X, **Li-Byarlay H**, Bai L, 2024. Impact of glyphosate application at the field level on honeybee food consumption, survival, gene expression, gut microbiota, and metabolomic profiles, *Environmental Research*, 118509.
- 51 Ma C, Shi X, Chen S, Han J, Bai H, Yu H, Li Z, **Li-Byarlay H***, & Bai L, 2024. Combined pesticides in field doses weaken honey bee (*Apis cerana* F.) flight ability and analyses of transcriptomics and

metabolomics, *Pesticide Biochemistry and Physiology*, 105793.
<https://doi.org/10.1016/j.pestbp.2024.105793>

- 50 Bresnahan ST, Lee E, Clark L, Ma R, Markey M, Rangel J, Grozinger CM, & **Li-Byarlay H@**. 2023. Examining parent-of-origin effects on transcription and RNA methylation in mediating aggressive behavior in honey bees (*Apis mellifera*). *BMC Genomics* (2023) 24:315.
<https://doi.org/10.1186/s12864-023-09411-4> (IF = 4.558)
- 49 Siviter H, Fisher A, Baer B... **Li-Byarlay H**,... et al. 2023. *Protecting pollinators and our food supply: understanding and managing threats to pollinator health*. *Insect. Sociaux* 70 (2), 281-282
<https://doi.org/10.1007/s00040-022-00897-x> (IF = 1.64)
- 48 Zheng H, Wang S, Wu Y, Zou S, Dietemann V, Neumann P, Chen Y, **Li-Byarlay H**, Pirk C, Evans J, Hu F, Feng Y, 2023. Genomic signatures underlying the oogenesis of the ectoparasitic mite *Varroa destructor* on its new host *Apis mellifera*. *Journal of Advanced Research*, Journal of Advanced Research 44, 1-11. <https://doi.org/10.1016/j.jare.2022.04.014> (IF = 10.479)
- 47 Wang F, Wang Y, Li Y, Zhang S, Shi P, **Li-Byarlay H*** and Luo S, 2022. Pesticide residues in beebread and honey in *Apis cerana cerana* and their hazards to honey bees and human. *Ecotoxicology and Environmental Safety* 238:113574. (IF = 6.23)
- 46 Zhang YK, Tan HH, **Li-Byarlay H***, Luo S. 2022. Assessing the toxicological interactions of imidacloprid, thiamethoxam and chlorpyrifos to *Bombus terrestris* based on the combination index. *Scientific Reports* 12: 6301. (IF=4.379)
- 45 Ward K and **Li-Byarlay H@**, 2022. The Lifespan and Levels of Oxidative Stress in Foragers Between Feral and Managed Honey Bee Colonies. *Journal of Insect Sciences* 22: 1-6. (IF=1.857)
- 44 Qin J, Liu F, Luo S, Wu J, He S, Imran M, Ye W, Lou W, **Li-Byarlay H***, 2021. The Molecular Characterization and Gene Expressions of Trehalase in Bumblebee, *Bombus lantschouensis* (Hymenoptera: Apidae). *Sociobiology*, 68(4), e5443.
<https://doi.org/10.13102/sociobiology.v68i4.5443>. (IF=0.983)
- 43 Swami R, Ganser B, Strand M, Tarpy D, **Li-Byarlay H@**, 2021. Assessment and comparison of two different extraction methods on nucleic acids from individual honey bees, *Annals of the Entomological Society of America*, 114: 614–619, <https://doi.org/10.1093/aesa/saab027> (IF=1.77)
- 42 Wen X, Ma C, Sun M, Wang Y, Xue X, Chen J, Song W, **Li-Byarlay H***, Luo S, 2021, Pesticide residues in the pollen and nectar of oilseed rape (*Brassica napus* L.) and their hazards to honey bees. *Science of The Total Environment*, 786, 2021,147443,
<https://doi.org/10.1016/j.scitotenv.2021.147443>. (IF=7.963)
- 41 Smith J, Cleare X, Given K, **Li-Byarlay H@**, 2021. Morphological changes in the mandibles accompany the defensive behavior of Indiana mite biting honey bees against *Varroa destructor*, *Frontiers in Ecology and Evolution* doi: 10.3389/fevo.2021.638308 (IF=4.171)
- 40 Wu G, Li Q, Liu X, **Li-Byarlay H**, He B, 2021. Differential state-dependent effects of deltamethrin and tefluthrin on sodium channels in central neurons of *Helicoverpa armigera*, *Pesticide Biochemistry and Physiology*, 104836. (IF=3.963)
- 39 Smith J, Given K, **Li-Byarlay H**, 2021. The grooming and biting behavior of Indiana mite biters and commercial honey bee colonies. Proceedings of the 2021 American Bee Research Conference. *Bee Culture*. Mar. 2021
- 38 Ward K, **Li-Byarlay H**, 2021. The physiological effects of oxidative stress in feral honey bees. Proceedings of the 2021 American Bee Research Conference. *Bee Culture*. Mar. 2021
- 37 Cleare X, **Li-Byarlay H**, 2021. Using 48-hour queen cells to study the queen quality of honey bees. Proceedings of the 2021 American Bee Research Conference. *Bee Culture*. Mar. 2021

- 36 Li-Byarlay H @ and Cleare X, 2020. Current trends in the oxidative stress and ageing of social hymenopterans. In Russell Jurenka, editor: *Advances in Insect Physiology*, AIIP, UK: Academic Press. <https://doi.org/10.1016/bs.aiip.2020.09.002> (IF=3)
- 35 Chen Z, Kang J, Zhang Y, Yi X, Pang X, **Li-Byarlay H**, Gao X, 2020 Differences in the Bacterial Profiles and Physicochemical between Natural and Inoculated Fermentation of Vegetables from Shanxi Province. *Annals of Microbiology* 70: 1-12.
- 34 Guan DY, Jiang XW, Li QY, Liu X, Ma YQ, Chen Q, **Li-Byarlay H**, He BJ, 2020. Effects of Guadipyr on voltage-gated calcium and potassium channels in central neurons of *Helicoverpa armigera*, *Chinese Journal of Applied Entomology* 57: 841.
- 33 Jiang XW, Guan DY, Li QY, Liu X, **Li-Byarlay H**, He BJ, 2020. Effects of tefluthrin and deltamethrin on gut microbiota in *Helicoverpa*. *Acta Entomologica Sinica* 63: 1183-1193.
- 32 Wu Y, Zheng Y, **Li-Byarlay H**, Shi Y, Wang S, Zheng H, Hu F, 2020. CYP6AS8, a cytochrome P450, is associated with the 10-HDA biosynthesis in honey bee (*Apis mellifera*) workers, *Apidologie*. 51:1202-1212. <https://doi.org/10.1007/s13592-019-00709-5>
- 31 **Li-Byarlay H**®, Boncristiani H, Howell G, Herman J, Clark L, Strand MK, Tarpy D & Rueppell O, 2020. Transcriptomic and epigenomic dynamics of honey bees in response to lethal viral infection. *Front. Genet.* <https://doi.org/10.3389/fgene.2020.566320>
- 30 Ma C., Zhang Y, Sun J, Imranc M, Yang H, Wu J, Zou Y, **Li-Byarlay H***, Luo S, 2019. Impact of acute oral exposure to thiamethoxam on the homing, flight, learning acquisition and short-term retention of *Apis cerana*, *Pest Management Science* 75: 2975-2980.
- 29 **Li-Byarlay H**, Boncristiani HF, Howell G, Strand M, Tarpy DR, Rueppell O, 2018. Methylomic and transcriptomic analyses of lethal IAPV infection in honey bee pupae. Proceedings of the 2018 American Bee Research Conference. *Bee World*. 95:2, 47-72.
- 28 Kim D, Minhas BF, **Li-Byarlay H**, and Hansen AK. 2018. Key transport and ammonia recycling genes involved in aphid symbiosis respond to host-plant specialization. *G3: Genes, Genomes, Genetics*: g3-200297.

Pre-CSU appointment (27)

- 27 Thairu MW, Skidmore IH, Bansal R, Novakova E, Hansen TE, **Li-Byarlay H**, et al., 2017. Efficacy of RNAi knockdown using aerosolized siRNAs bound to nanoparticles in three divergent aphid species. *Insect Mole. Biol.* 26: 356.
- 26 Simone-Finstrom M, **Li-Byarlay H**®, Huang, MM, Strand MK, Tarpy DR, Rueppell O, 2016. Migratory management and environmental conditions affect lifespan and oxidative stress in honey bees. *Scientific Reports* 6: 32023. DOI: 10.1038/srep32023.
- 25 **Li-Byarlay H**®, Huang, M, Simone-Finstrom M, Strand MK, Tarpy DR, Rueppell O. 2016. Honey bee (*Apis mellifera*) drones resistant to paraquat exhibit increased tolerance, not avoidance or repair, of oxidative damage. *Experimental Gerontology*, 83: 15-21.
- 24 **Li-Byarlay H**®, 2016. The function of DNA methylation marks in social insects. *Frontiers in Ecology and Evolution*, 4: 57.
- 23 **Li-Byarlay H**®, BR Pittendrigh, LL Murdock. 2016. Plant Defense Inhibitors Affect the Structures of Midgut Cells in *Drosophila melanogaster* and *Callosobruchus maculatus*. *International journal of insect science* 8: S28595
- 22 Wang Y and **Li-Byarlay H**®, 2015. Physiological and Molecular Mechanisms of Nutrition in Honey Bees. In Russell Jurenka, editor: *Advances in Insect Physiology*, 49:25-58, AIIP, UK: Academic Press. (IF=3)

- 21 Wang L, Chi YH, Guo F, **Li-Byarlay H**, Balfe S, Fang J, Pittendrigh BR, Zhu-Salzman K. 2015. Transcriptomic response of cowpea bruchid to N-acetylglucosamine-specific lectins. *Insect Sci.* 22: 83-94.
- 20 **Li-Byarlay H**[#], Rittschof CC, Massey JH, Pittendrigh BR, Robinson GE, 2014. Socially responsive effects of brain oxidative metabolism on aggression. *Proc. Natl. Acad. Sci. USA.* 111: 12533-12537.
- 19 **Li-Byarlay H**, Li Y, Stroud H, Feng S, Newman TC, Kaneda M, Hou K, Wickline SA, Jacobsen SE, Ma J, and Robinson GE, 2013. RNA interference knockdown of DNA methyl-transferase 3 affects gene alternative splicing in the honeybee. *Proc. Natl. Acad. Sci. USA.* 110: 12750-12755. **Cover article**
- 18 Li Y, **Li-Byarlay H**, Burns P, Borodovsky M, Robinson GE, and Ma J. 2013. Self-training algorithm for splice junction detection using RNA-seq and its application to honey bee transcriptomes. *Nucleic Acid Res.* 41: e51.
- 17 Strycharz JP, Lao A, **Li H**, Qiu X, Lee SH, Sun W, Yoon K S, Doherty JJ, Pittendrigh B R, and Clark, JM, 2013. Resistance in the highly DDT-resistant 91-R strain of *Drosophila melanogaster* involves decreased penetration, increased metabolism, and direct excretion. *Pestic. Biochem. Physiol.* 107: 207-217.
- 16 Li Y, **Li H**, Burns P, Borodovsky M, Robinson GE, and Ma J. 2012. TrueSight: Self-training algorithm for splice junction detection using RNA-seq, *Research in Computational Molecular Biology, Lecture Notes in Computer Science*, 7262/2012: 163-164.
- 15 Qiu X, W Sun, CM McDonnell, **Li H**, LD Steele, J Wu, J Xie, W Muir, B. Pittendrigh. 2012. Genome - wide analysis of genes associated with moderate and high DDT resistance in *Drosophila melanogaster*. *Pest Management Science* 69: 930-937.
- 14 McDonnell CM, D King, JM Comeron, **Li H**, W Sun, MR Berenbaum, B Pittendrigh. 2012. Evolutionary Toxicogenomics: Diversification of the Cyp12d1 and Cyp12d3 Genes in *Drosophila* Species. *Journal of Molecular Evolution* 74: 281-296.
- 13 Sun L, **Li H**, MJ Seufferheld, KR Walters, VM Margam, A Jannasch, N Diaz. B Pittendrigh. 2011. Systems-Scale Analysis Reveals Pathways Involved in Cellular Response to Methamphetamine. *PloS ONE* 6: e18215.
- 12 Kirkness EF, Haas BJ, Sun W, Braig HR, ... **Li H**, et al. 2010. Genome sequences of the human body louse and its primary endosymbiont provide insights into the permanent parasitic lifestyle. *Proc. Natl. Acad. Sci. USA* 107: 12168-12173.
- 11 Lee SH, JS Kang, JS Min, KS Yoon, JP Strycharz, R Johnson, O Mittapalli, VM Margam, W Sun, **H Li**, J Xie, J Wu, EF Kirkness, MR Berenbaum, BR Pittendrigh, JM Clark 2010. Decreased detoxification genes and genome size make the human body louse an efficient model to study xenobiotic metabolism. *Insect Molecular Biology* **19**: 599-615.
- 10 **Li H**, L Sun, O Mittapalli, WM Muir, J Xie, J Wu, BJ Schemerhorn, A Jannasch, JY Chen, F Zhang, J Adamec, LL Murdock, BR Pittendrigh. 2010. Bowman-Birk inhibitor affects pathways associated with energy metabolism in *Drosophila melanogaster*. *Insect Molecular Biology* 19: 303-313.
- 9 **Li H**, L Sun, O Mittapalli, WM Muir, J Xie, J Wu, BJ Schemerhorn, W Sun, ...BR Pittendrigh. 2009. Transcriptional signatures in response to wheat germ agglutinin and starvation in *Drosophila melanogaster* larval midgut. *Insect Molecular Biology* **18**: 21-31.
- 8 **H Li**, G Buczkowski, O Mittapalli, J Xie, J Wu, R Westerman, ...BR Pittendrigh. 2008. Transcriptomic profiles of *Drosophila melanogaster* third instar larval midgut and responses to oxidative stress. *Insect Molecular Biology* **17**: 325-339.
- 7 **Li H**, 2007. Transcriptomic, proteomic and structural analyses of *Drosophila melanogaster* larval midgut. Doctor of Philosophy Dissertation. *Purdue University Library e-Pubs*: AAI3344182.

- 6 **Li H**, Margam V, Muir WM, Murdock LL, Pittendrigh BR. 2007. Changes in *Drosophila melanogaster* midgut proteins in response to dietary Bowman-Birk inhibitor. *Insect Mol. Biol.* 16: 539-549.
- 5 Festucci-Buselli RA, Carvalho-Dias AS, de Oliveira-easAndrade M, Caixeta-Nunes C, **Li H**, Stuart JJ, Muir W, Scharf ME, Pittendrigh BR. 2005. Expression of Cyp6g1 and Cyp12d1 in DDT-resistant and susceptible strains of *Drosophila melanogaster*. *Insect Mol Biol.* 14: 69-77.
- 4 Pedra JH, Brandt A, **Li H**, Westerman R, Romero-Severson J, Pollack RJ, Murdock LL, Pittendrigh BR. 2003. Transcriptome identification of putative genes involved in protein catabolism and innate immune response in human body louse (Pediculidae: *Pediculus humanus*). *Insect Biochem Mol Biol.* 33: 1135-1143.
- 3 Pedra JH, Brandt A, Westerman R, Lobo N, **Li H**, Romero-Severson J, Murdock LL, Pittendrigh BR. 2003. Transcriptome analysis of the cowpea weevil bruchid: identification of putative proteinases and alpha-amylases associated with food breakdown. *Insect Mol. Biol.* 12: 405-12.
- 2 **Li H**, Li HH, Wang SX, 2002. The catalogue of Crambinae of China (Lepidoptera: Pyralidae). *SHILA, Revta. Lepid* 29: 49-76.
- 1 Liu D-H, Meng Q-H, Li Q, **Li H**, Gao X-Z, 2002. Observation of root tips of garlic (*Allium sativum* L.) by electron microscopy after treatment with cadmium. *Israel Journal of Plant Sciences* 48: 289-295.

Preprints or data deposit

- Zhao Z, Pudsaini R. Kroh D, Rehan S, **H Li-Byarlay**, 2025. Selection of reference genes for RT-qPCR analysis in *Ceratina Calcarata* Robertson (Hymenoptera: Apidae) under different developmental stages and landscapes. <https://doi.org/10.5281/zenodo.16414347>
- Zhao Z, Pudsaini R. Kroh D, Rehan S, **H Li-Byarlay**, 2025. Developmental and Environmental Stability of Candidate Reference Genes in the Wild Bee *Ceratina calcarata*, <https://www.biorxiv.org/content/10.1101/2025.07.28.667322v1>
- Zhao Z, Pudsaini R. Farrell CM, Marvin J, Rehan S, **H Li-Byarlay**, 2025. Comparative Virome Profiling and Discovery of Novel Viruses in Managed and Wild Bees using RNA-seq, doi: <https://doi.org/10.1101/2025.04.27.650873>
- Li-Byarlay H**, 2025. *Zenodo*. Dataset of Queen Reproductive Performance proj. DOI 10.5281/zenodo.15198781.
- de Carvalho, Clarissa ... **Li-Byarlay H** ... et al., Long-read sequencing for epigenomic studies in the fields of Ecology and Evolution. preprint. <https://zenodo.org/records/14671205>
- Li-Byarlay H**, & Cao D. 2024. A new mobile application for mite damage identification. *Zenodo*. <https://doi.org/10.5281/zenodo.14045618>
- Li-Byarlay H**, 2024. Biting behavior against Varroa mites in honey bees is associated with changes in mandibles. *Zenodo*. <https://doi.org/10.5281/zenodo.14046436>
- Li-Byarlay H**. Chapters 10. Honeybee activities and behavior. In *The Hive and The Honeybee*. Chinese version. Shanghai Bai Niang Apiculture Co., LTD.

AWARDED AND PENDING GRANTS & FUNDING

EXTERNAL (\$13.98 MIL)

1. Tamara Potter (PI), **Hongmei Li-Byarlay (Co-PI)**, Joni Nelson (Co-PI), **(\$167,835)**, USDA Grant, Veterinarian and beekeeper training in European Foulbrood diagnosis (2025 – 2027, **awarded**)
2. Marcus Nagle (PI), **Hongmei Li-Byarlay (Co-PI)**, **(\$1,200,000)**, 1890 ARD Foundation Grant, Community Canopy Cultivation: Growing 21st Century Johnny Appleseeds in Urban Ohio (2024-2028, **Awarded**)
3. **Hongmei Li-Byarlay (PI) (\$750,000)**. USDA Grant, Transportation causes stress in honey bees. Grant # 2024-38821-42061 (2024-2027, **Awarded**).

4. Christina Grozinger (PI), ... **Hongmei Li-Byarlay (CSU Co-PI) (\$73,000)**, Alfred P. Sloan Foundation Planning Grant) (2023 **Awarded**)
5. John Yang (PI), ... **Hongmei Li-Byarlay (CSU PI) (\$10,000,000 total, CSU \$2,500,000)**, 2023-2028, USDA Nextgen HBCU-HACU-RIU Consortium: A Novel Synergistic Paradigm for Training the Next Generation Agriculture Workforce for a Sustainable Future, Grant # 2023-70440-40147 (**Awarded**)
6. Marcus Nagle (PI), **Hongmei Li-Byarlay (Co-PI), (\$500,000)**, 2023-2025, USDA Grant, Innovative use of a perennial flower species as a new crop to improve honey production while advancing sustainability of agricultural production systems in Ohio (**Awarded**)
7. Karen Kapheim (PI), **Hongmei Li-Byarlay (Co-PI), (\$50,000)**, 2022, Conference Grant: Synthesis and Networking to Improve Pollinator Health at IUSSI 2022, USDA, **Awarded**
8. **Hongmei Li-Byarlay (PI) (\$250,000)**. 2022-2025. A Sustainable Approach to Control *Varroa* Mites - Improving the Quality of Queens using Local Resources, USDA NCR-SARE Research and Education Grant (2021-2024), **Awarded**)
9. **Hongmei Li-Byarlay (PI) (\$300,000)**. USDA Grant, Investigate The Biotic and Abiotic Stresses In Honey Bees And Pollinators (2021-2024, **Awarded**)
10. **Hongmei Li-Byarlay (PI) (\$180,000)**. USDA AFRI Pollinator Health Seed Grant: Genetics and Breeding of Mite Biting Bees for Resilience to *Varroa* Mites (2020 – 2023, **Awarded**)
11. **Hongmei Li-Byarlay (PI) (\$3,000)**. 2019. Propolis Project Bee Research Fund for Brain and Behavior, Levin Foundation (2019, **Awarded**)
12. **Hongmei Li-Byarlay (PI), (\$300,000)**, NSF Research Initiation Award #1900793 : Search for the Epigenomic Mechanisms of Paternal Inheritance of Aggression in Social Honeybees (2019 – 2023, **Awarded**).
13. **Hongmei Li-Byarlay (PI), (\$40,000)**, USDA Sustainable Agriculture Research and Education North Central Region, Partnership Grant, Improving the Honeybee Queen Qualities and Genetic Diversity by Transferring Selected Queen Cells (2019 – 2021, **Awarded**)
14. Bingjun He (PI), **Hongmei Li-Byarlay (Co-PI) (\$80,000)**, 2019-2022. Insect Hemolymph Blood Barrier's role in blocking the pesticide and association with corn earworm (*Helicoverpa armigera* (Hübner)) pesticide resistance. National Natural Science Foundation of China (NSFC) (2019 – 2022, **Awarded**)
15. **Hongmei Li-Byarlay (PI) (\$7,000)**. 2018. College of Agriculture, Diversity Transformation Collaboration Initiative: Role of RNA Methylation in the Caste Evolution of Social Insects. Purdue University College of Agriculture Diversity Grant (2018, **Awarded**)
16. **Hongmei Li-Byarlay (PI) (\$4,000)**. 2018. Propolis Project Bee Research Fund, Levin Foundation (2017, **Awarded**)
17. **Hongmei Li-Byarlay (PI) (\$50,000)**. 2017. Go Mini Grant Challenge, Illumina Inc. (2017, **Awarded**)

TEACHING EXPERIENCE

Central State University (CSU)

Wilberforce, OH

Instructor, Entomology and Integrated Pest Management (AGR4350) and Lab, 4 credit hr, Fall 2025, Spring2024, Fall2021, Fall2019

Instructor, Animal Behavior and Ethology (BIO4600), 2 credit hours, new course developed, Fall2022

Instructor, Undergraduate Research In Biology (BIO4500), 2 credit hrs, Fall2017/Spring2018/Spring2020/Spring2022

Instructor, Honey Bees and Beekeeping (BIO4600), 3 credit hrs, new course developed, Spring2020

Instructor, Internship in Sustainable Agriculture (AGR4500), 2 credit hours, new course, Spring2019/20

Guest lecture, *Horticulture* (AGR1200), Spring2018/20/22

Wright State University

Fairborn, OH

Guest lectures on the topic of Genes and Behavior, Genes, Organisms, and Ecosystems (ES7120), Wright State University, Fall2020

EXTENSION, OUTREACH AND PUBLIC TALKS

- Spring2022 Statewide Virtual In-service training for CSU Extension Agents (Feb. 14th, 2022)
- Spring2020 Statewide Virtual In-service training for CSU Extension Agents (Jan 19th, Feb. 3rd)

Peer-reviewed Extension Publication

- Nair S, Gouge, DH, Mostafa A, Li, S, Umeda K, **Li-Byarlay H**. Wild Honey Bees in Community Environments – Identification, Biology, and Reducing Risks. Publication Date: Thu, 07/30/2020 - 12:00am. Publication Number: AZ1846-2020. <https://extension.arizona.edu/pubs/wild-honey-bees-community-environments-%E2%80%93-identification-biology-reducing-risks>

- Written Articles

Other Publications

- Jay Evans, 2023 An interview with Dr. **H Li-Byarlay**, Associate Professor and Project Director for Pollinator Health, Central State University, Ohio. *Bee Culture*.
- **Li-Byarlay H & S East**, 2022. All in a Year's Work: Achievements toward Entomology for All *American Entomologist*, DOI10.1093/ae/tmac061. (IF=0.756)
- Farrel M, Gibson M, **Li-Byarlay H**, 2022. Mandible differences between high and low mite biters: a multifaceted approach. Proceedings of the 2022 North American Bee Research Conference. *Bee Culture*. Mar. 2022
- Belton H, Luo S, **Li-Byarlay H**, 2022. The grooming behavior between European Honey Bees and Asian Honey Bees. Proceedings of the 2022 North American Bee Research Conference. *Bee Culture*. Mar. 2022
- **Li-Byarlay H** and Megan Serr. The 2017 Animal Behavior Conference at Indiana University. Page 9-10 in the Signal Monthly newsletter of the W. M. Keck Center for Behavioral Biology at North Carolina State University, May 2017, Vol 18, no. 9.
- **Li-Byarlay H**. Exploring behavioral biology with full speed. Page 3 in the Signal Monthly newsletter of the W. M. Keck Center for Behavioral Biology at North Carolina State University, May 2016, Vol 17, no. 9.
- **Li-Byarlay H**. Honeybee genetics and genome editing, Page 8 in the Signal Monthly newsletter of the W. M. Keck Center for Behavioral Biology at North Carolina State University, Nov. 2015, vol. 17, no.3.
- **Li-Byarlay H**. Sharing the buzz in Arizona. Page 3 in the Signal Monthly newsletter of the W. M. Keck Center for Behavioral Biology at North Carolina State University, Oct. 2015, vol. 16, no.6.
- Bucci A, Sierras A, and **Li-Byarlay H**. Viruses as mutualists: Life history evolution, genome architecture, and function. Page 3 in the Signal Monthly newsletter of the W. M. Keck Center for Behavioral Biology at North Carolina State University, Oct. 2015, vol. 16, no.2.
- **Li-Byarlay H***, Huang M, Simone-Finstrom M, Strand M, Tarpy DR, & Rueppell O. 2015. The physiological effects of oxidative stress in honey bee drones, *Kelly Beekeeping* 61: 12.

Extension presentations

- Genetics and breeding of mite-resistant stocks in honeybees and IPM. Northeast IPM center invited webinar. Nov. 20th, 2024.
- Indiana Beekeeper Association Fall Conference, Oct. 28-29th, 2024. Fort Wayne, IN
- Bee Research at Central State University, CSU Extension summer talk series in the CSU Botanical Garden, June 23, 2023
- Invited speaker, Beeing Diverse: Inspiring Leaders In Beekeeping, Bee Culture, Medina, OH, Oct 1, 2022
- Societies Consortium 4th Annual All-Members Convening (Virtual), Sep 20-21, 2022
- Black Farmer Conference, Sep 9, 2022, Wilberforce, OH
- Honeybee brain and behavior, Aug 28 2022, Oakwood History Society, Dayton, OH
- Pollinator Health Research at CSU, Nov 1, 2021, Community Solutions Open House, Yellow Springs, OH
- ESA Webinar - Leadership Happy Hour_Why and how to serve on an ESA committee, 15 Sep 2020
- ESA Webinar - Leadership Happy Hour - Learn Why and How to Get on the Ballot, ESA DEI Committee
- Ohio State Beekeepers Association Conference, Nov. 2020, Plain City, OH
- WCSU Real Roots Radio Interview for CSU Extension, Oct. 2020, Wilberforce, OH
- CSU Beekeeping Webinars, Jun. 3rd, 17th, Jul. 1st, 15th, 2020
- Greater Grand Lake Beekeepers Association, Feb. 2020, Medina, OH
- Ohio State House, Mar. 2019, Columbus OH
- Western Central Ohio Beekeepers Association, Apr. 2019, Urbana, OH
- OEFFA conference, Feb. 2019, Dayton, OH
- Minority, Women, and Small Farmers Conference at Central State University, Apr., 7th, 2018, Wilberforce, OH
- Science GaGa Club Webinar/Lecture, Jan. 17th, 2018
- What do honeybees do? Bell Creek Intermediate School, Manger's class, 24 G4 students, Dec. 15, 2017, Bellbrook, OH

Blog

Powerful Genetic and Genomic Toolbox of *Nasonia* Wasps [Link](#)

Germline Modification of Ants [Link](#)

Media coverage and comments

2026 CSU TV Station with Mike Gromerly

2024 Bee Culture Interview with Jay Evans, <https://www.beeculture.com/found-in-translation-45/>

2023 National Public Radio interview <https://www.wyso.org/news/2023-07-03/central-state-university-receives-usda-research-grant>

2023 Ohio researchers develop new breed of honeybees to fight parasites" | 'Central State University's breeding program aims to create worker bees with smaller mandibles known as 'Ohio Mite Biters' | By Stephen Goin, FOX Business Published June 30, 2023 1:20am ED
<https://www.foxbusiness.com/economy/ohio-researchers-develop-new-breed-honeybees-fight-parasites>

2023 Channel 2 WDTN <https://www.wdtn.com/video/central-state-university-sparks-interest-in-farming-through-grant/8771645/>

2023 Interviewed for the PBS series about mite-biting bees by KQED Deep Look in October,
https://youtu.be/69Do8tw_xy0?si=9RaMruQVU8greBF4

2023 Time Magazine interview

2023 USA Today highlighted in their education article about 1890 Land Grant Research

2021 New York Times, <https://www.nytimes.com/2021/11/10/science/bees-screaming-murder-hornets.html>
Bees Make This "Screaming" Sound When Attacked By Hornets

2021 Entomology Today, Favorite among on demand presentations and posters,
<https://entomologytoday.org/2021/10/27/entomology-2021-attendees-share-early-favorites-among-on-demand-presentations-posters/>

2020 Dayton News WRGT, Central State University to Host Bee Keeping Summer Webinar Series,
<https://dayton247now.com/news/local/central-state-university-to-host-bee-keeping-summer-webinar-series>

2018 The WCSU Radio Brown Bag Lecture Series - <https://www.wcsufm.org/news-and-information/2018-02-28/the-wcsu-brown-bag-lecture-series-dr-hongmei-li-byarlay>

2013 Genomeweb news, <https://www.genomeweb.com/blog/week-pnas-223#.YbSq9NDMI2w>

TEACHING TRAININGS/CERTIFICATES

2023 AFS Global Up Educator Global Competence Certificate

2021 Mental Health First Aide Certificate, National Council for Behavioral Health

2021 Independent Applying the Quality Matter Rubric - Virtual (APPQMR) Certificate

2020 REMOTE: The Connected Faculty Summit (Arizona State University, virtual conference)

2014 Master Online Teacher (MOT) professional certificate (online course design, online instruction, and other issues related to online teaching and learning, six online faculty development courses (each course was 8-wk long) and Master Online Teacher Practicum), UIUC

2013 UIUC Faculty Summer Institute (sponsored by the Illinois Board of Higher Education)

2012 Certificate in Foundations of Teaching, Center for Teaching Excellence, UIUC

PROFESSIONAL SERVICE AND ACTIVITIES

GRANT REVIEWING

Reviewer for the Leverhulme Trust Research Project Grant, UK

Reviewer for Biotechnology and Biological Sciences Research Council Research Project Grant, UK

Reviewer for Foundation for Food and Agriculture Research (FFAR)

Ad Hoc Reviewer for National Science Foundation (NSF)

Panel Reviewer for United State Department of Agriculture (USDA)

Editorial Board Member

Current Research in Insect Science - Editorial Board, 2021-present

Nature Scientific Reports - Editorial Board, 2020 – present

Editor Role

- *Annals of Entomology Society of America 2020 (Editor for Special Issue in Social Insects Topics)*
<https://academic.oup.com/aesa/pages/the-road-to-sociality>
- *Journal of Insect Science – Subject Editor 2015-2017, Co-Editor of the Special Collection (AAPA Honey Bee Health 17 papers, <https://academic.oup.com/jinsectscience/pages/honey-bee-research-in-the-united-states>)*

- *Scientific Reports 2023 Editor for Special Issue Invasive Species Genetics*

Journal Reviewer: *Apidologie, Comparative Biochemistry and Physiology–Part B: Biochemistry & Molecular Biology, Current Opinion in Insect Science, Epigenetics & Chromatin, Foodborne Pathogens and Diseases, Frontiers in Ecology and Evolution, Gene Regulation and Systems Biology, Genes, Genome Biology and Evolution, Genome Research, Insects, Insect Science, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Insect Sociaux, Journal of Economic Entomology, Journal of Insect Physiology, Journal of Insect Science, Journal of Stored Products Research, Medical & Veterinary Entomology, Nature, Nature Communication, Nature Ecology and Evolution, Nature Scientific Reports, PeerJ, Physiological Entomology, Philosophical Transactions of the Royal Society B, PLoS ONE, Science, Scientific Advances, The Science of Nature (Naturwissenschaften)*

PROFESSIONAL SCHOLARLY POSITIONS HOLD AND ACTIVITIES

Co-organized symposium – Science Policy (ESA 2022 mtg) with Erin Cadwalader, Sheila Colla, Monica Farfan, Meaghan Pimsler, and Alvin Simmons
 Co-organized symposium - (ESA 2022 mtg) with Sandra Rehan
 Organized Symposium – ESA International Branch Virtual Symposium - *How are the Bee Pollinators doing around the world - Insights and challenges*
 Co-organized symposium - *Transforming Entomology Research and Education at Historically Black College and Universities and Minority Serving Institutions* (ESA 2021 virtual mtg) with Michelle Samuel-Foo
 Co-organized the workshop - *Empower Your Leadership Story: An Interactive Leadership Development Virtual Workshop*, OCT 18, 2021 (ESA Annual Hybrid Meeting) with Patti Prasifka, Rayda Krell, Melissa Willrich Siebert.
 Co-organized ESA Webinar- How to Serve on an ESA Committee, with Patti Prasifka, Rayda Krell, Melissa Willrich Siebert.
 Co-organized ESA Webinar- How to nominate others and cast your ballot, with Patti Prasifka, Rayda Krell, Melissa Willrich Siebert.

National Positions

Committee member for ESA Better Common Names Project Task Force (2022-2023), volunteer
 President-elect for ESA International Branch (2023), elected
 Chair of ESA Diversity and Inclusion Committee (2022), nominated
 Member of ESA Diversity and Inclusion Committee representing PBT section (2019-2021)
 Initiated a student award for four minority students traveling to ESA annually, created a new ESA website with HBCU and 1890 Land Grant University information for ESA members, co-organized two webinars on how to nominate and volunteer for ESA)
 Member of ESA Scientific Policy Committee representing International Branch (2021-2023)
 Elected Member of IUSSI NAS Election Committee (2022-2025)
 Elected Member of IUSSI NAS Award Committee (2017-2020)
 Member of IUSSI 2022 International Conference Fundraising Committee (2021-2022)
 Member of AAPA Ad hoc Award Committee (2021, organize the review process for 17 student/postdoc/extension applications)

PUBLIC SERVICE

Volunteer at Bellbrook Intermediate School for Science Fair (Feb. 2019)
<https://www.sugarcreek.k12.oh.us/content.aspx?id=38196>
 Volunteer at the Food Bank Centerville, Beavercreek, & Wilberforce, (2020-present)
 Judge at the Ohio Academy of Science District Science Day (2019, virtual 2021, 2023),
<https://www.ohiosci.org/>

Judge at the Ohio Academy of Science State Science Fair at Columbus OH (2019, Virtual 2021),
<https://www.ohiosci.org/>

Member of Sugarcreek Cares (2020 - present) <https://www.facebook.com/Sugarcreek-Cares-105977361177343>

Member of Youth United Dayton (2020 - present) <https://www.youthuniteddayton.org/>

Member of the Toastmasters Club - Leaders on the Rise, Central State University (2019 - present)
<https://www.toastmasters.org/Find-a-Club/07017426-leaders-on-the-rise>

Performer for the 30th Asian Festival with an audience of 500, in 1755, E. Broad St, Columbus, Ohio, May 25th, 2024.

SOCIETAL MEMBERSHIPS

American Association of Professional Apiculturists (AAPA), 2015-now

American Association for the Advancement of Science (AAAS), 2017- 2025

Animal Behavior Society (ABS), 2018- 2024

Entomological Society of America (ESA), 2002-now

Genetic Society of America (GSA) 2017- 2024

International Union for the Study of Social Insects (IUSI), 2014-now

One in 1 Million Women in STEM (www.1mwis.com), 2020